

BRITISH MEDICAL ASSOCIATION



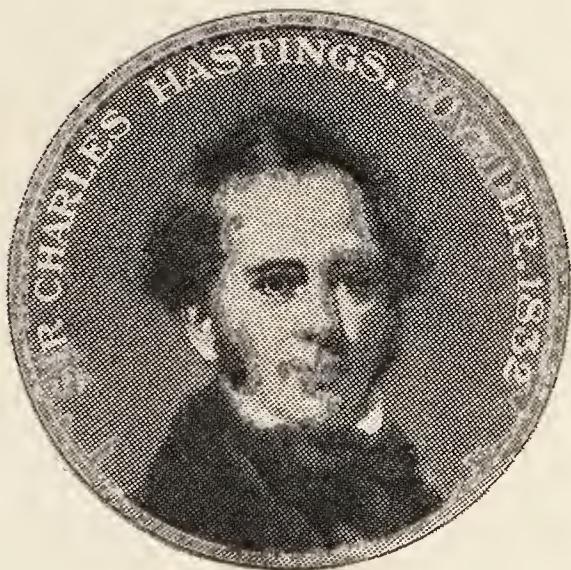
LIVERPOOL
1912

LIVERPOOL UNIVERSITY.



British Medical Association.

ANNUAL MEETING, 1912,
LIVERPOOL.



H A N D B O O K .

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LIVERPOOL FROM THE MERSEY.



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UNIVERSITY OF MEDICINE

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HANDBOOK COMMITTEE.

Sir James Barr.

Thomas H. Bickerton.

F. Charles Larkin.

Owen T. Williams.

INTRODUCTION.

In former years it has been the custom to furnish the visiting members of the Association with a Handbook, containing a description of the various points of interest concerning the city in which the meeting is held.

On the present occasion, such an arrangement would be superfluous, for owing to the liberal-minded generosity of the City Council, a copy of the "City of Liverpool Official Handbook" will be presented to each member. The Mersey Docks and Harbour Board have with equal generosity promised all available copies of "The Port of Liverpool—Its rise and Progress." The Executive Committee desire to express their thanks for these most useful books, which will enable the visitors of the Association to more readily appreciate the city and port.

The publication of the Association Handbook in its usual form therefore became unnecessary, and although completed and in the hands of the printer, it had at the last moment to be re-written. The present book, undertaken and carried through in great haste, is the outcome.

The opportunity is now taken of thanking for their cordial co-operation and assistance all those who have been approached, and to acknowledge our indebtedness to the Corporate and University authorities, the Committees of the Royal Infirmary and Athenæum, Messrs. Littlebury Bros., W. T. Pike & Co., as well as others, for the loan of blocks, prints, photographs and pictures.

“Deus nobis haec otia fecit.”

CHAPTER I

LIVERPOOL.

PROGRESS—RELATIONS WITH THE BRITISH MEDICAL ASSOCIATION.

A few general remarks on the history of the city may not be without interest to intending visitors, though, perhaps, no town in England has so small pretensions to historic distinction. It has been said of the early histories of Liverpool that they have evidently been written with a view to please the inhabitants, “and are therefore replete with eulogy and partial panegyric, which is not astonishing when we know that they are written by natives.”

There is no proof that Liverpool existed in Anglo-Saxon times, and as it is not mentioned in Domesday Book—whereas such places as Wavertree, Bootle, and Walton are—it is reasonable to assume its origin after the Conquest. As the value of Walton is given at 8s., it cannot be claimed that the Commissioners neglected even mean places. It is possible the site of Liverpool was included in Walton, for when the town of Liverpool did arise, Walton was its parish church, and it remained a part of Walton until separated by Act of Parliament in the reign of William III (1699).

The discovery of ancient canoes, ancient British coins, ornaments, arrow-heads, and other implements in the vicinity of Liverpool, affords ample evidence of early occupation, though strangely enough none of these have been found on the actual site of the town.

The origin of the name of Liverpool—spelt variously “Litherpool,” “Lyrpul,” “Leverpool,” etc.—like that of “Jeames,” is “wropt in mystery.”

There are legends respecting charters granted to the town in the reigns of Henry I and Henry II, but the first authentic charter was granted by King John in 1207. Liverpool Castle was completed in 1237, and in 1251 large grants of land were made to William Ferrers, Earl of Derby.

Liverpool's importance in early days appears to have been as a port of embarkation for Ireland, the Isle of Man, to ports on the west coast of England, and many parts of Wales; but so unimportant was it that at the commencement of Queen Elizabeth's reign there were in Liverpool only 138 householders and cottagers, while the number of sailing barks was 12, and of sailors but 75. From the bye-laws of the period we learn that “bachelors, apprentices, and servants were not to walk out after nine o'clock at night without lawful business,” and that “no sales be made in church.” Another order was “that if any person speak evil of the Mayor he shall lose his freedom.” The member for Liverpool at this time was Francis—later the celebrated Lord—Bacon.

Probably as the result of the illegal exaction of “ship money” by King Charles in 1636, Liverpool sided with the Parliamentarians, and was besieged and taken by Prince Rupert in June, 1644. The town was, however, recaptured by the Parliamentarians after a siege of three months. At this period the town was protected by mud walls. In 1647 Liverpool was made a free and independent port, and not subject to Chester officers; and two years later beggars were ordered to be shipped off to Barbados.

The progress of the town had been slow, the population in 1700 being variously estimated at 4,240 and 5,700.

Early in the eighteenth century the export of Manchester manufactured goods to the West Indies commenced, and increased to “so great a degree as to have annually for many years paved the streets of both towns with silver.”

In 1709 the first vessel sailed to Africa—there were then 84 vessels belonging to the port—while in 1730 the number sailing to Africa was 15 out of 166. The prosperity of the town, due in great measure to the West Indian trade, received additional impetus from the slave traffic and privateering. In the eleven years, 1783 to 1793, the aggregate number of Liverpool ships employed in the Guinea trade was 921, of which 878 were “slavers.” The number of slaves carried was 303,737; the sterling value was £15,185,850; and Liverpool’s share was estimated at £1,117,647 per annum.

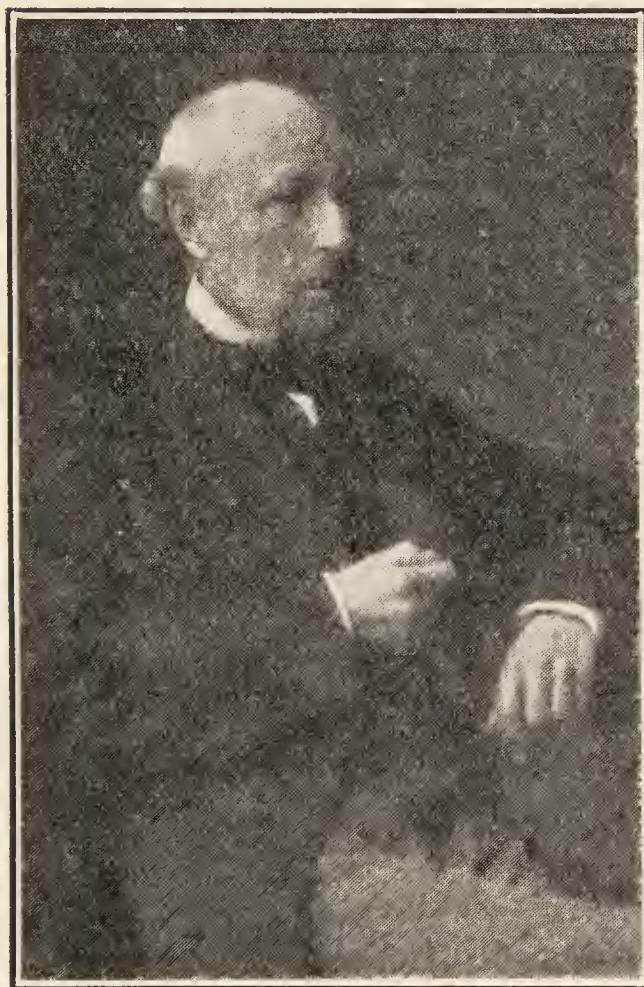
The population in 1801 was 77,000. The slave trade ceased in 1807, and the ruin of Liverpool was predicted. In place of decay, in the ensuing thirty years the population more than doubled, being 165,000 in 1831—the year before Dr. Hastings established the Provincial Medical and Surgical Association—now the British Medical Association—at Worcester.

LIVERPOOL AND THE BRITISH MEDICAL ASSOCIATION.

Liverpool has from the very beginning been prominently identified with the Association. On the first elected Council of the Association appeared the names of no less than four distinguished Liverpool men. These were John Rutter, M.D., first President of the Liverpool

Medical Society (1833), founder of the Medical Institution building (opened 1837) and of the Athenaeum Reading Room (opened 1799); James Dawson, Surgeon to the Liverpool Infirmary, and later President for twenty-six years of the combined medical societies meeting in the Medical Institution; Thomas Jefferies, M.D.; ~~Jeffries~~ and Thomas Stewart Traill, M.D., F.R.S.E., Physician to the Liverpool Ophthalmic Infirmary, and later Professor of Medical Jurisprudence in the University of Edinburgh. More striking evidence of the interest of Liverpool medical men in the Association and how largely they contributed towards its success may be gathered from the fact that of the sixteen essays and "cases" comprising its first volume, five were contributed by the Liverpool Medical men: Drs. Thomas Jefferies, Stewart Traill, James Dawson, David Williams, M.D., (Physician to the Liverpool North Dispensary), and Roger Wakefield Scott, M.D. (Physician to the Liverpool South Dispensary). The first meeting to take place in Liverpool was held on the seventh anniversary of the formation of the Association, under the presidency of the above-mentioned Dr. Thomas Jefferies. ~~Jeffries~~ We are told in the *Transactions* that "the meeting at Liverpool . . . excited much interest amongst the faculty of that great town." Further, that the business of the meeting which took place on Wednesday and Thursday, July 24th and 25th, 1839, was very heavy. At this time vaccination was in the experimental stage, and its practice was a subject which was considerably exercising the minds of medical men. Consequently it is not surprising to find that 278 pages of the *Transactions*, embodying the proceedings of the Association, or more than half the book, were devoted to papers on vaccination, and the report of a Section

appointed to inquire into the subject. At this meeting also the "Vaccination Petition" was passed for presentation to Parliament, the petitioners, numbering nearly 1,200, urging the State to forbid "ignorant, and illiterate persons to take up the practice of small-pox inoculation, and asking that "a mild and efficient substitute for inoculation might be brought within the reach of every member of the community."



A. T. H. WATERS, M.D.

tion twenty years before. Dr. Waters was President of the third meeting to be held in Liverpool. This was in 1883, and the presidential address was devoted to "The Present Aspects and Future Prospects of Medicine." In view of the projected drastic reforms in the treatment of consumption it is interesting to note that in his address Dr. Waters expressed the

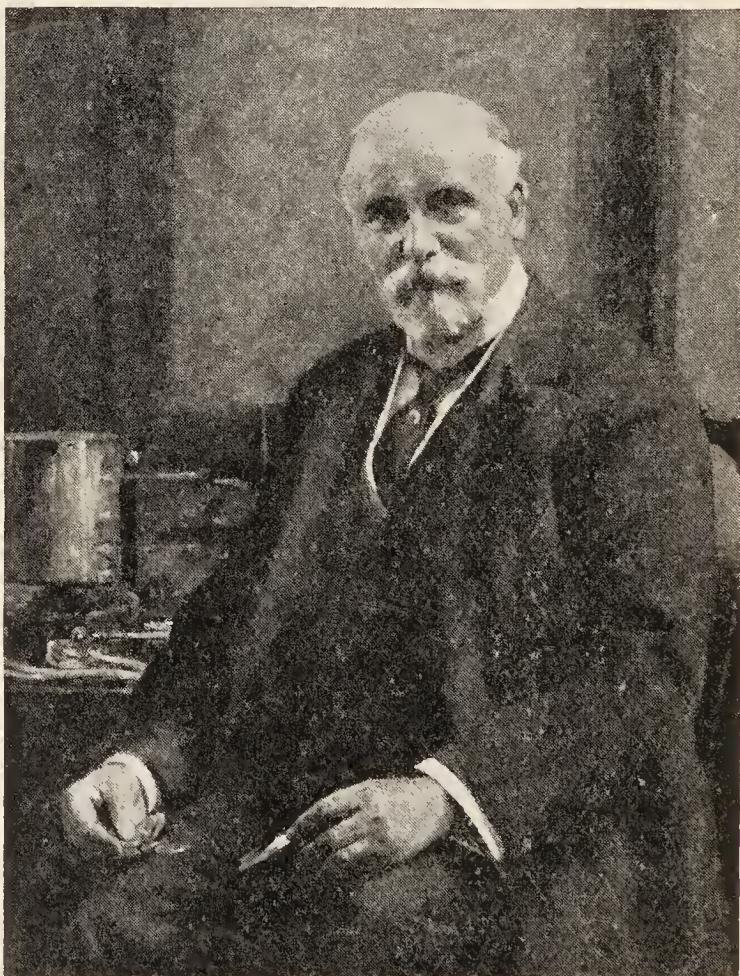
and efficient substitute for inoculation might be brought within the reach of every member of the community." The second visit of the Association to Liverpool took place in 1859, when the President was Dr. James R. W. Vose, who, in his address from the chair, struck a note of sadness by referring to the loss which the Association had sustained in the deaths of many of those who had helped in its forma-

hope "that the discussions which would take place at the meeting would help them to decide whether the so-called *Bacillus tuberculosis* is the cause or the consequence of the disease."

It is a matter of extreme regret that as the proofs of this book go to press, news is received of Dr. Waters' death. In a letter recently received promising a generous donation, with every wish for a successful gathering, he said, "If I live to see the meeting it will be the third I shall have seen in Liverpool, 1854, 1883, 1912."

Much as the medical men of Liverpool would like this to have been so, the sense of his loss is mitigated in the realisation that his work will keep his name among the noble traditions of the Medical School and University.

Now, twenty-nine years later, the Association visits Liverpool for the fourth time, under the Presidency of Sir James Barr, and there is every sign that the present meeting will be one of the most successful yet held under the auspices of the Association.



SIR JAMES BARR.

BRITISH MEDICAL A LIVERPOOL

GILL STREET

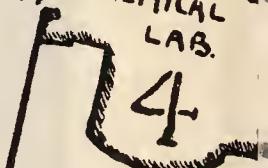
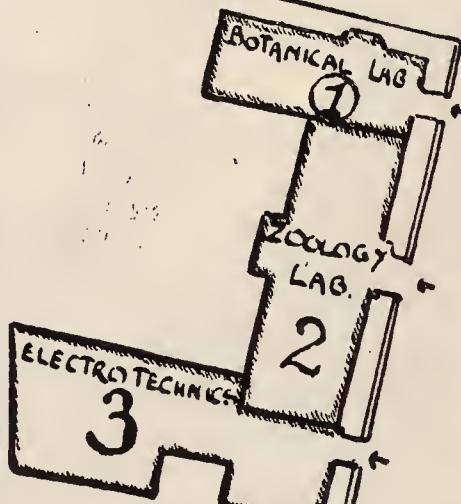
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TO ROYAL
INFIRMARY

DANSIE STREET.

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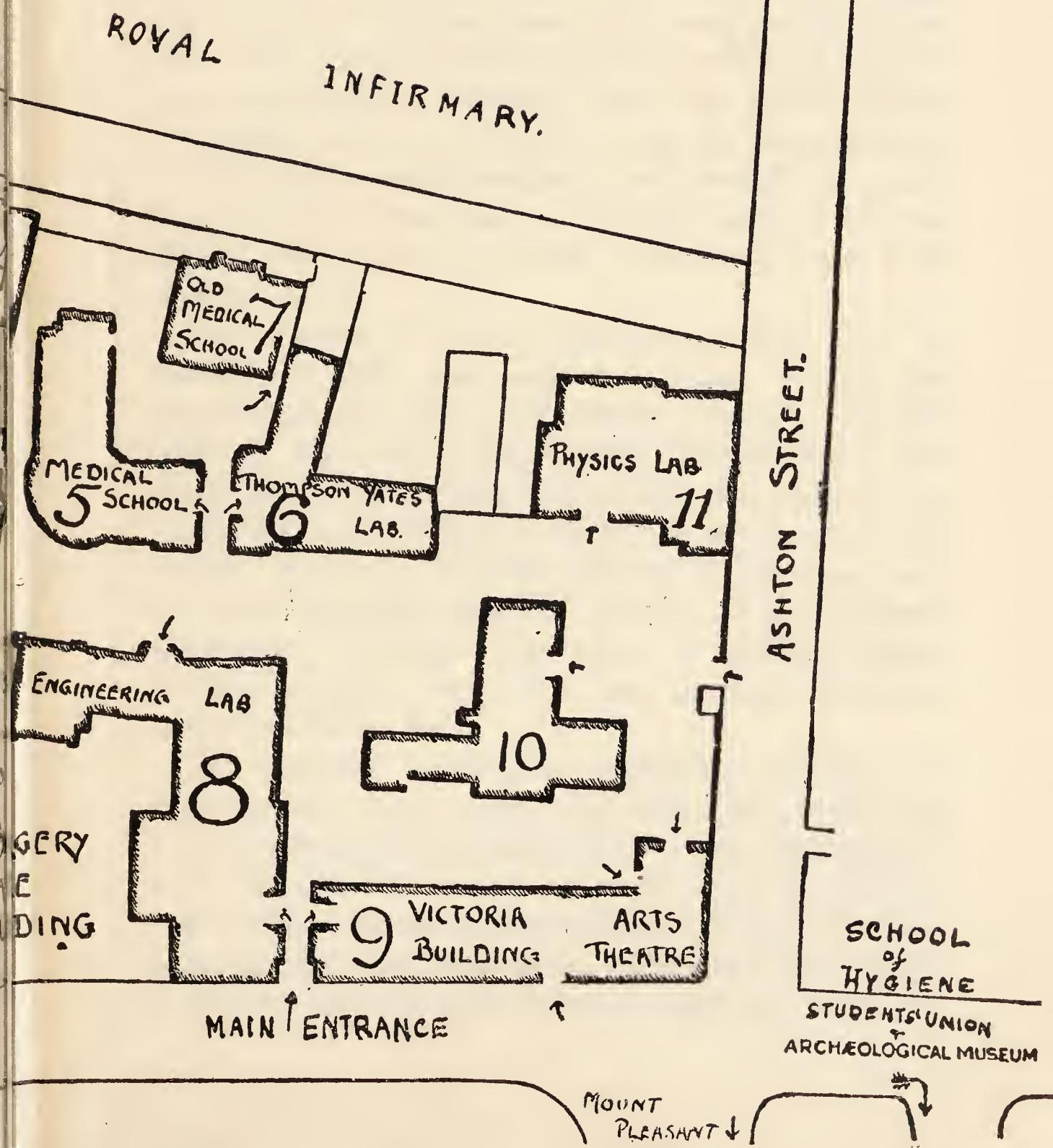


BROWNLOW STREET.

ADDRESSES
IN
MEDICINE &
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BROWNLOW HILL

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FEATURES OF LIVERPOOL, AND CHANGES SINCE THE LAST MEETING, 1883.

Those who have not visited Liverpool during the last twenty-nine years will require a "Guide" if they visit it in 1912, for the aspect of the City is greatly changed. Streets have been widened, and the many new buildings give an unfamiliar appearance, to which even residents are hardly yet accustomed. The facilities for visiting the City and neighbourhood have been greatly added to. Since 1883 the Mersey Tunnel, connecting Liverpool with Birkenhead, Wallasey, and the entire Wirral Peninsula, has been opened; and the electrification of the railway system renders a run through the tunnel a less trying ordeal than in the early years of its existence, when passengers were almost suffocated with sulphur fumes.

The Electric Overhead Railway, another feat of engineering skill, was opened in 1893. From the windows of the trains the visitor obtains a splendid view of the river, sailing ships, and steamers, dry docks and landing stages, and, in fact, the whole of the magnificent line of docks, which are the finest in the world. This was the first railway of its kind, and traverses the docks from end to end. At the northern extremity is Seaforth, the home of William Ewart Gladstone when a boy, while the southern terminus is close to Sefton Park.

The tramway system has undergone complete reorganization. New routes have been laid down and widely extended, horse traction has entirely disappeared, and the splendid service of electric cars to almost every part of the city leaves little to be desired. The disappearance of the horse-drawn trams and the ancient omnibuses from the main streets is, perhaps, one of the

changes which will first strike the eye of those who remember Liverpool when they were the principal means of locomotion. In these days of electric cars, motors, taxicabs and motor cycles, a fine carriage with a spanking pair of horses attracts considerable attention.

The view of the city from the river is striking. In the foreground are the magnificent new offices of the Mersey Docks and Harbour Board and Liver Friendly Society, and the clock on the latter building constitutes Liverpool's claim to the possession of at least one "biggest thing on earth," for the "Great George" outrivals "Big Ben" in size.

Another notable change since the last visit of the Association is the improvement in the immediate vicinity of St. George's Hall.

St. John's Church, which formerly occupied the commanding position on the west side of the Hall, has been demolished, and the site, as well as the Church-yard, converted into gardens.

Here there are statues to William Ewart Gladstone—whose birthplace in Rodney Street (now the home of the medical faculty) may still be seen—William Rathbone, other famous men, and the memorial to the officers and men of the King's Liverpool Regiment who fell in the Burmese, Afghan, and South African wars.

Leaving St. George's Hall by the north side, a fine series of buildings is now presented to the view—the Walker Art Gallery, the gift of Sir Andrew Barclay Walker, Bart.; the Free Public Library and Picton Reading Room; the Brown Library and Museum, the former the gift of Sir William Brown, Bart.; and the Central Technical Schools. The latter and the County Sessions House have been added since the last

meeting. There is no other city in the universe that can show a group of buildings representing science, art, and literature in such proximity, science and art being pivoted on literature..



GLADSTONE'S BIRTHPLACE.

Popularly styled "The Gateway of the West", Liverpool, the maritime capital of the empire and the second seaport of the world is keeping well abreast—if in many instances it is not in advance—of the modern spirit of progress. Not only in the centre of the city are striking changes to be seen, but in the outskirts are developments of

which the inhabitants are deservedly proud.

The Queen's Drive, most of which is completed, is a very fine avenue, varying from 84 to 108 feet wide, beautified by trees, extending for $6\frac{3}{4}$ miles round the east side of the city. The new avenues leading from this, the Garden City at Childwall and Gateacre, and many other improvements show the city's keen appreciation of modern town planning. Most of the Churchyards

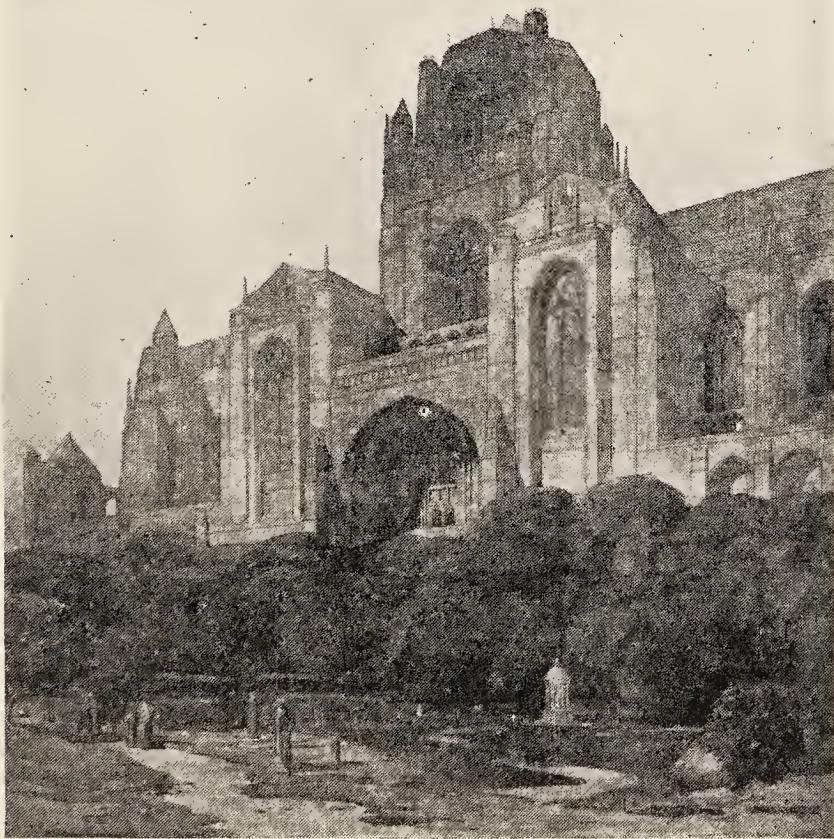
in the city have been converted into gardens. A new play-ground at Wavertree—comprising 108 acres—was presented to the city in 1895, and new parks have been opened at Calderstones, Roby, and at Greenbank Road, close to Sefton Park. The city is now much larger than in 1883, it having absorbed several large adjoining townships such as Walton and Garston. Further extensions are contemplated.

The growth of Birkenhead, and the rapid rise of Wallasey, now a borough, have given the opposite side of the river a different aspect; green fields have given way to a large town. The promenade on the river side from Seacombe to New Brighton has added largely to the amenities of approach to "Mersey City." At the south end of the river at Eastham, are the locks leading to the Manchester Ship Canal, opened in 1887.

Perhaps no feature is more striking than the alteration in the individual tonnage of the vessels to be seen in the river. For the better accommodation of the modern ocean leviathan enormous docks are in the process of construction at the north end of the present line on the Liverpool side, of which a good view is to be obtained from the Overhead Railway. In other parts of this volume, reference will be made to the advance in municipal affairs, the almost entire re-building of the Hospitals, and the general progress of the city. The citizens have continued in their usual generosity to charities and all means for the public welfare. No less than one million pounds sterling has been given in sums of over one thousand pounds to charitable objects. Two features of especial note must be here recorded as having occurred since the last meeting, the commencement of the new Cathedral, of which the Lady Chapel is complete, and the granting of the charter to the University in 1903.

THE CATHEDRAL.

The foundation stone of the new Cathedral, now in course of erection on St. James' mount, was laid by His late Majesty King Edward VII. on July 19th, 1904. The present Cathedral Scheme is a revival of a former enterprise, and not the initiation of an entirely new one.



LIVERPOOL CATHEDRAL.

Liverpool, from the first moment of its existence as a separate Diocese, has felt and recognised the need of a dignified and worthy Cathedral Church. The Bishopric of Liverpool was formed in 1878 and the Very Rev. J. C. Ryle, Dean of Salisbury, was appointed to the See. The parish Church of St. Peter, in Church Street, was assigned as its Cathedral in 1880. the

Endowment Fund being successfully raised through the instrumentality of Mr. Torr, M.P., and Mr. Arthur Forwood.

The proposal to erect a Cathedral took active shape in 1887. A site on the west side of St. George's Hall, where St. John's Church then stood, was chosen. The scheme failed to make adequate progress although promises amounting to £41,000 were received. Dr. Chavasse was appointed second Bishop of the Diocese in 1900, and under his supervision matters rapidly progressed. Sir William Forwood consented once more to become the moving spirit of the fund, and his unwearied activity and enthusiasm carried everything before it. The fund, including gifts for special objects, soon reached £325,000. After very careful consideration St. James' Mount was selected for the site, as being both central and commanding. The Executive Committee appointed the late G. F. Bodley, R.A. and G. Gilbert Scott as joint architects, thus securing the experience of the greatest modern exponent of Gothic architecture, and the brilliant talent of Mr. Scott.

The principal dimensions of the Cathedral taken from Mr. Scott's drawings are as follows:—Total external length, including Lady Chapel, 611 feet; length of Nave 192 feet; width of Nave $53\frac{1}{2}$ feet; total length across transepts 198 feet; total height of Nave Vaulting 116 feet; total width of North facade 196 feet; height of central Tower 260 feet; height of Northern tower 200 feet; superficial area of building, 101,000 feet. The foundation stone of red sandstone weighs five tons, 15 cwts, and stands on masonry running down 21 feet into the solid rock. The corner stone of the Cathedral Chapter House, towards which

a sum of £10,000 was provided by the Freemasons of the Province of West Lancashire in memory of the first Earl of Lathom, the late R. W. Provincial

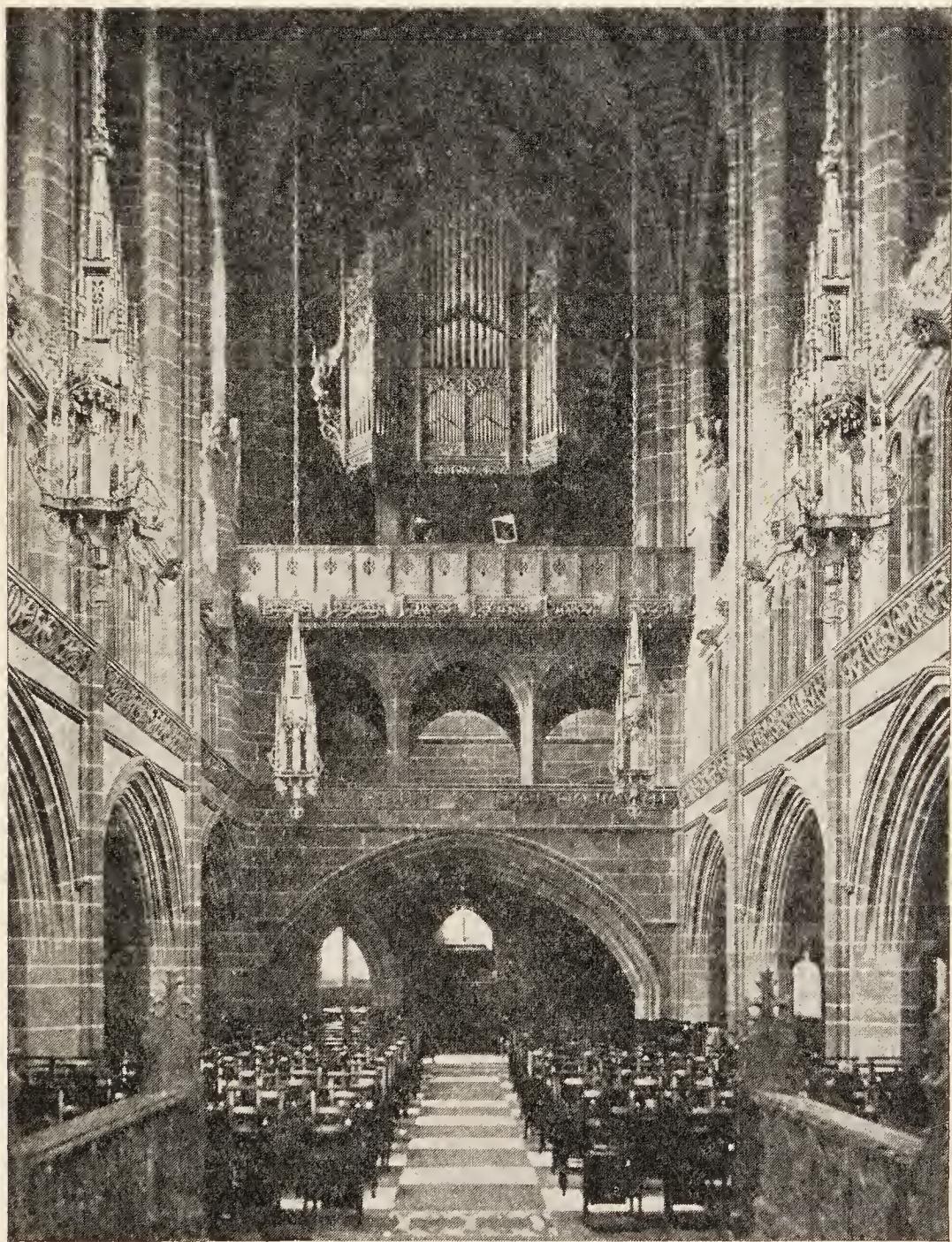


Photo by R. R. Madsen] LADY CHAPEL, WEST END.

[*Anfield.*

Grand Master, was laid on June 17th, 1906, by His Royal Highness the Duke of Connaught, most worshipful Grand Master.

On St. Peter's Day, June 29th, 1910, the first portion of the Cathedral, the Lady Chapel, was consecrated by the Lord Bishop of Liverpool. The Ecclesiastical Commissioners have accepted the Chapel as the Cathedral Church of Liverpool for the time being, thus enabling the full Cathedral Services to be held. The hour of daily service, which is fully choral, is 3 p.m. on Sundays, and 5 p.m. on week-days.

The Chapel is designed in a style which may best be described as a free interpretation of fourteenth century Gothic. It is constructed in local red sandstone and consists of a stone vaulted Nave and chancel nearly sixty feet in height, with narrow side aisles, which are intended to be used as passage ways and not for seating purposes. The Chancel terminates in an apse. The floor is nearly 14 feet below the level of the Choir, from which a flight of stone steps descends to it. There is an ante-chapel above which is a western gallery level with the Choir aisle floor. The internal side of the Chapel is 100 feet long by 35 feet 6 ins. wide, the width between the arcade walls being 25 feet. It is two storied, a narrow gallery running along the bottom of the clerestory protected by a stone screen 11 feet high, and finished with a deep cresting of roses, thistles, shamrocks and lilies, with projecting figures of angels and minstrels. The height of the vault is 58 feet, and the design of the vaulting shafts conveys a sense of great loftiness.

The work of raising the fabric of the Cathedral is well forward, and already it is apparent that for simplicity and grandeur it will be unsurpassed by any edifice of the kind in the Kingdom.

THE UNIVERSITY.

The last meeting of Association was held in the Liverpool College, a school in Shaw Street. University College had only two years previously received its charter as such, its staff in 1883 consisting of a Principal, nine Professors and two Lecturers. The building was the small one now to be seen (though shorn of one wing) in the centre of the quadrangle. The science classes had to rely upon the hospitality of the Medical School of the Royal Infirmary.

In 1884 the College was admitted as a College of the Victoria University. The years that followed the admission of the College into Victoria University were a period of steady development. The effect of the change was felt at once, and growth when it once began was steady and continuous. The registered day students increased from 274 in 1885—1886 to 645 in 1902-1903. Excluding capital in land and buildings, the endowment of the College for Chairs, Lectureships, Scholarships and other such purposes increased from £131,953 in the former period, to £316,083 in the latter. “Men before bricks had been from the first the policy of the College.” In 1884 the College had nine Professors holding endowed Chairs, six unendowed Chairs of Medicine, eight Lecturers and Readers, and nine Assistant Lecturers and Demonstrators. In 1903 it had twenty endowed Chairs, six Medical Chairs without endowment, and about sixty Lecturers, Readers, Assistant Lecturers and Demonstrators. The extension of the fabric during the nineteen years between 1884 and 1903, was as noteworthy as the increase of staff, no less than £180,000 being spent on buildings alone. The total income of the College which in 1884 amounted to £6,000 had risen to about £30,000 in 1903.

At a meeting of the Court of Governors held on the 11th of May, 1901, the following resolution was passed :—

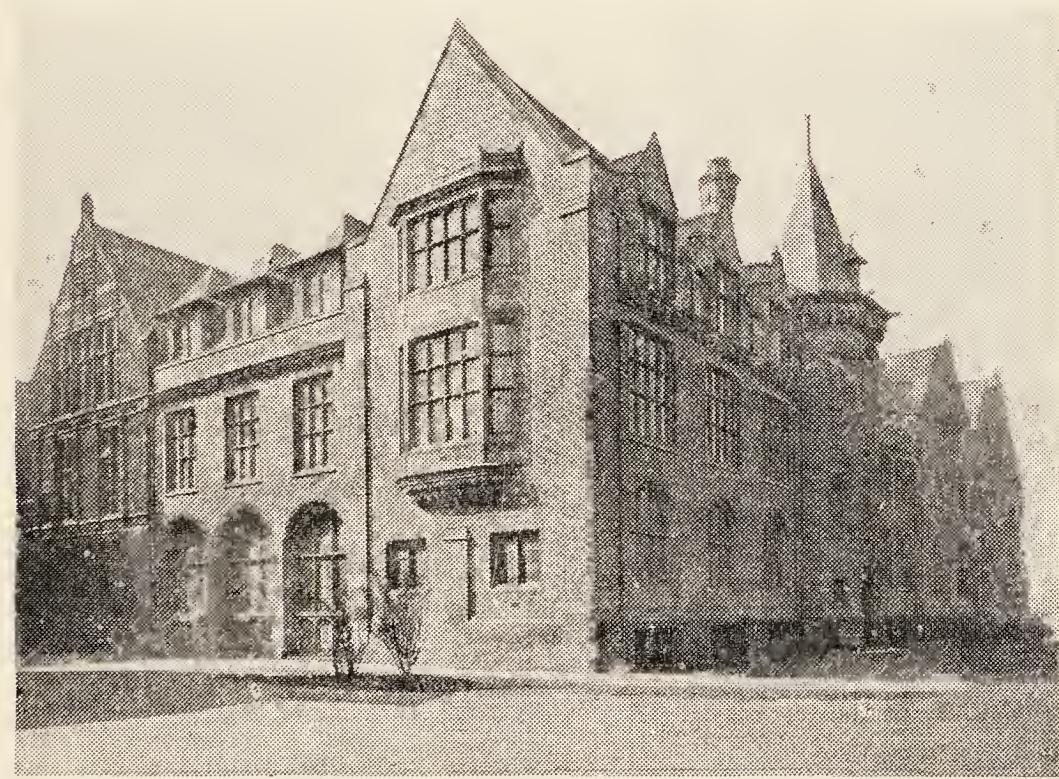
“That while gratefully acknowledging the advantages which have accrued to University College by its association with the Victoria University, this Court is of opinion that a University should be established in the City of Liverpool, and will welcome a scheme with this object upon an adequate basis.”

The Liverpool University Charter was signed on 15th July, 1903, taking effect 1st October in the same year.

The members of the Association will have ample opportunities at the meetings (which are to be held in the University) to observe the enormous progress which has been made. Where there was on the last visit but one small building there are now the fine set almost completing the quadrangle. The money for the completion of the Arts building has been obtained, and very soon the whole of this site will be built upon. Not only has this been attained but already large buildings have been erected in Brownlow Street, and temporary premises are occupied in Ashton Street and Bedford Street. There are now no less than 61 Professors, Associate Professors, and Readers, 84 Lecturers and 64 Assistant Demonstrators and Tutors, making a total staff of 207 as compared with a total of 26 in 1884. Up to September 30, 1911, £400,173 had been spent on the fabric, and the endowment of Chairs had reached £310,861. Lecturers and Laboratory Endowments, Fellowship Scholarships and Prize Endowments, together amounted to £103,600. Recently another chair with an endowment of £10,000, has been founded in memory of J. Everett Dutton, one of the old students of the University College, who was the first to discover trypanosomes in human blood. He died at Kosingo, while on an expedition of the Liverpool School of Tropical Medicine.

This year Lord Haldane opened the new Harrison Hughes Engineering Laboratories, executed at a cost, including equipment, of about £40,000. The new Men Students' Union cost £8,000, and the Women's Union and joint debating hall is in the course of erection, the cost to be approaching £10,000. The annual expenditure amounts to over £86,000.

To those who remember the University College at the time of the last meeting, and who now see it again for



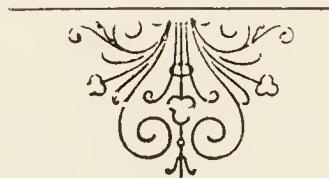
HARRISON-HUGHES ENGINEERING LABORATORIES.

the first time, the change must appear remarkable. That the citizens of Liverpool have in that time fully appreciated the value of a University is evident from the fact that almost one million pounds have been spent upon it.

A brief record, published for the twenty-fifth anniversary celebrations, states :—“A word should be said “about the relations of the University to the City and

“ its authorities. How much it owes to municipal
“ sympathy and support—the foundation of the College,
“ the establishment of the University, and the main-
“ tenance of the University when established—the records
“ show. It is a great debt ; the University acknowledges
“ the debt that it owes. It remembers that its business
“ is not only to make scholars but also to make citizens.
“ It is no mean, no trivial record of work
“ attempted, and work achieved. There have been
“ mistakes and shortcomings, but progress has been
“ speedy and sure. The University as it stands to-day
“ far surpasses the hopes and dreams of those who made
“ the first venture twenty-five years ago. But those
“ who may witness its Jubilee—if no untoward cal-
“ amity befall—will find that what we have seen in
“ our time was but the promise of still greater things
“ to come.”

By the courtesy of the Vice-Chancellor and Council, the Association meetings will be held in the University—a privilege which will afford great pleasure to the organizers of the Conference and to their guests.



CHAPTER II

MUNICIPAL AND OTHER UNDERTAKINGS.

PUBLIC HEALTH ADMINISTRATION.

Liverpool has been noted during the past half century as the pioneer in many sanitary reforms and it is interesting to note that the first Medical Officer of Health to be appointed in the country, Dr. W. H. Duncan, commenced duty in Liverpool. No doubt the great progress which has been made was practically forced upon the authorities, as many years ago, owing to famines in Ireland, thousands of persons crossed the Channel to find work at the rapidly extending docks, and as houses in sufficient number could not be found, families crowded into cellars and tenement dwellings until a most insanitary condition of affairs existed. A great emigrant trade to Canada and the United States was at this time commencing, and through these and other causes, epidemics of cholera, smallpox, and typhus fever occurred one after the other, year after year, carrying off thousands of the poor people who were herded together in dwellings unfit for human habitation.

The lessons resulting from this gigantic experiment on the public health have made a deep impression, and now no City is ahead of Liverpool in formulating and carrying out schemes for promoting the good health of its citizens. In 1895, the first year of greater Liverpool, the death rate was 24.8 per 1,000, in 1910 it was 17.9, a reduction of about 25 per cent. To put it plainer,

if the death rate of 1895 had continued, more than 42,000 people who are alive to-day in Liverpool would not have survived. The birth rate, which was 31 per 1,000 in 1910, is the highest in England amongst the towns with a population of 200,000 and over. It is usual to find that towns with a high birth rate have a high infant mortality rate and in past years this has held good in Liverpool, e.g., the average number of deaths of infants under one year of age to every thousand births during the last 37 years was 184. The infant mortality rate for 1910 however was only 139 per thousand, and was preceded by rates of 143, 140, 143, and in 1906, 171 per thousand. No doubt this reduction is due to the great efforts which have been made to improve the conditions of infant life in the City. Under the Notification of Births' Act, 1907, every birth occurring in the City has to be notified to the Medical Officer of Health within 36 hours. Female Inspectors visit every family where a birth has taken place and where their services are likely to be of use, and printed and verbal instructions are given to the mother as to the care of her infant. Further visits are paid if it seems desirable.

There is no feature in the affairs of the city more striking than the marked decline in the death rate from tuberculosis. The policy pursued in this direction, mainly through the exertions of the Medical Officer of Health (Dr. E. W. Hope) is yielding markedly beneficial results. The annual average death rate per 100,000 of the population, at all ages, from all forms of tuberculosis was during the four decades from 1886 to 1905, 430.8, 349.8, 309.8, 247.2, respectively. During the four years 1906-1910, the corresponding figure was 201.

THE PORT SANITARY AUTHORITY.

The City Council is the Sanitary Authority for the Port of Liverpool, and the work is carried on under the control of the Medical Officer of Health. A special hospital, standing in an isolated position on the river bank, close to the Quarantine Station, is provided for the numerous cases of infectious disease arriving on ships from all parts of the world. Vessels are medically inspected on arriving in the river, and any doubtful case of illness is at once removed to hospital, the vessel disinfected, and allowed to enter dock. The other persons on board are required under the Local Government Board Regulations to give their name and place of destination so that they may be kept under medical observation for a few days to see if any infectious disease should develop. Owing to the diffusion of Cholera, Smallpox, and Plague, in a large number of foreign ports, this is a most important branch of the sanitary service, and has been aptly called "the first line of defence."

Routine inspections of vessels in dock are also carried out in order to see that proper sanitary conditions are observed on board. The officers also attend at the medical inspection of emigrants to take charge of any case of infectious disease which may be detected.

The Port Sanitary Authority is also responsible for the inspection of the immense importations of food-stuffs through the Port of Liverpool under the Public Health (Regulations as to Food) Act. That such action is an absolute necessity if the health of the people in this country is to be preserved, may be gauged from the quantity of foodstuffs which the Inspectors had to seize and destroy during the twelve months ending September, 1911, viz :—Beef, 770 tons ; Mutton,

18 tons ; Pork, 83 tons ; Bacon, $67\frac{1}{2}$ tons ; 54,193 pieces of Offal ; 37,411 tins of Canned Fish, Meats and Fruit ; Grain, 1,566 tons.

LIVERPOOL ISOLATION HOSPITALS.

The City is now supplied with ample hospital accommodation for the isolation of cases of infectious disease. Thirty years ago the only provision made was that for paupers in connection with the Workhouse Infirmary, together with a small hospital in Netherfield Road, which was maintained by private subscription, and charges were made for the treatment of patients. Most of the cases of infectious disease were treated at home. The Corporation then erected a hospital at Grafton Street and took over the management of the institution in Netherfield Road. Extensions were made and further buildings erected, until at the present time the number of City Infectious Hospitals is as follows :—

| | |
|--------------------------------|---------------------------------------|
| City Hospital, North, 162 beds | City Hospital, Fazakerley 350 beds |
| “ “ South, 100 beds | |
| “ “ East, 152 beds | “ “ Fazakerley Annexe |
| “ “ Parkhill, 180 beds | 160 beds |
| Total number of Beds, 1,104. | |

At the present time all cases of smallpox and typhus fever are removed to hospital, and urgent requests for removal are gradually increasing in connection with other infectious diseases. For instance, during the year 1910, 5,193 patients were removed to hospital for treatment, including 84 per cent. of the cases of scarlet fever, 73 per cent. of the diphtheria cases, and 76 per cent. of the cases of typhoid fever.

An interesting development has recently taken place in the setting aside of beds for the treatment of pulmonary tuberculosis, and also of infantile diarrhoea.

This movement was a very welcome one, but as only 50 beds were provided for the treatment of the former disease, it was evident that such a number was totally insufficient to meet the demand. Further accommodation has therefore been decided upon.

The hospital accommodation is allocated as follows, but of course a little variation is made from time to time in connection with the increase or reduction of any particular form of disease :—

| | | | |
|------------------------------|----------|----------------------|---------|
| Smallpox | 160 beds | Diphtheria | 90 beds |
| Typhus Fever.. .. | 10 ,," | Measles | 60 ,," |
| Typhoid Fever | 50 ,," | Tuberculosis | 50 ,," |
| Scarlet Fever | 584 ,," | General Isolation .. | 100 ,," |
| Total number of Beds, 1,104. | | | |

POLICE AND AMBULANCE.

The Liverpool City Police include those employed at the expense of the Mersey Docks and Harbour Board in policing their docks upon the east side of the river, not only those within the city but those within the Borough of Bootle.

There is a small force of mounted police available for street duty but mostly employed in driving the horsed vehicles, fire-engines, prison-vans, patrol-wagons, and ambulances, and a small force of river police with a steam launch for patrolling the river.

POLICE AND FIRE ALARMS.

Liverpool may be said to be very near America, and that is perhaps the reason why the Watch Committee have adopted some of the mechanical aids to police work which are more common there than in this country. Foremost among such aids may be described the system of Police and Fire Alarms, by which the constable in the street is in touch with his station and can call for assistance of all sorts and may be reached himself if he is wanted.

AMBULANCE DUTY.

By arrangement between the Watch Committee and the different hospitals a complete system of horse ambulances is provided by the former, the only expense falling on the latter being the provision of ambulance surgeons for the day service and of standing room for the horses and carriages. There are direct telephones between the hospitals and the police stations where the signal boxes report.

For day service the city is divided into five districts, working from four hospitals and one police station ; for night service into two districts, working from police stations. The ambulance from a police station is accompanied by a constable trained to give First Aid.

The hospitals are allowed a limited use of the ambulance service for cases other than accidents, provided the patient is not able to pay for a private ambulance.

The ambulances are not let out to well-to-do people, as several firms keep ambulances for hire, and there is, of course, no desire to compete with them.

Hand ambulances are kept at all police stations, and every man joining the force is trained to render First Aid before he is discharged to street duty. 1,680 members hold the certificate and 1,246 the medallion of the St. John Ambulance Association. Last year First Aid was given in 699 cases, in 498 of which doctors gave special praise to the treatment, besides which 4,100 people who were taken ill or met with minor accidents in the streets were helped and taken care of.

ST. JOHN AMBULANCE ASSOCIATION.

The centre for Liverpool was formed in 1880 and was one of the first to be instituted in the provinces. Since its formation 15,910 persons have been instructed in

either First Aid or Home Nursing, 11,750 Men and 4,160 Women, and 13,572 certificates have been granted. Although this is the most important centre of Ambulance work in Liverpool, the above figures do not represent the total amount of ambulance work in the City. There are several smaller centres or branches of centres, *e.g.* the Liverpool (women's) centre connected with the school of cookery, the Mersey Mission to Seamen centre, and branches of the centres connected with the various Railways.

The Mersey Mission centre is doing a most important work in training and passing officers who are compelled by the Board of Trade regulations to obtain the certificate of the Association before they can present themselves for their examinations. Since this regulation came into force in 1909 over 900 men have been instructed, a record which no other port in the world can approach. The Railway men have been most keen ambulance students, and the inter-Railway Shield, which is the Blue Ribbon of Railway Ambulance corps, has been won on more than one occasion by local teams from the L. & Y. Railway. The Overhead Railway team have also been runners up for the same competition. No one who has not been a judge in these competitions, the finals of which are held at St. John's Gate, London, has any idea of the perfection to which Ambulance work has now been brought.

There are four divisions of the Liverpool corps of St. John's Ambulance Brigade, consisting of two Ambulance divisions (Liverpool and Bootle) and two Nursing divisions (Liverpool and Bootle) the former have 8 officers, 6 sergeants, 10 corporals, and 102 privates, and the latter 2 officers and 40 nursing sisters, making a total effective strength of 168. All the units

are in uniform and the Head Constable invariably calls upon the Corps on all public occasions.

HOUSING OF THE WORKING CLASSES.

The demolition of insanitary property or the clearing away of the slums has occupied the attention of the Liverpool Civic Authorities since the year 1864. The extraordinary number of back to back houses which existed in the town at that time, estimated at 22,000, justified the Corporation in seeking Parliamentary powers for dealing with the evil. An Act was "therefore" passed entitled the "Liverpool Sanitary Amendment Act, 1864," familiarly known as the "Local Act."

No less than 19,000 houses unfit for human habitation have been demolished during the past 40 years. There are probably nearly 3,000 houses still which will have to come down, but the demolition is regulated by the rate at which the Corporation is able to build new houses for the dispossessed tenants. At the present time they have erected something like 2,879 houses and 30 shops, providing accommodation for 14,400 people, which is equal to the population of many a small town.

Notwithstanding the great cost of demolishing these old rookeries and erecting substantial, healthy dwellings, with plenty of open space surrounding them, the Council has never faltered in the great work of undoing the evils bequeathed to the City.

The total cost of the work of Demolition and Housing up to 31st December, 1910, amounted to £1,098,491. Deducting from this figure the amount realised from the sale of surplus lands, viz. £66,321, a balance of £1,032,169 is left. Of this amount there is a balance still owing of £759,939. Deducting the net rents of the dwellings from the charges for Interest and Sinking Fund on the balance of debt, leaves a sum of about

£35,102, which amount is charged to the rates and is equivalent to slightly over 2d. in the £ thereon. This charge however is not wholly attributable to the Housing work of the Corporation, by reason of the fact that the annual charge for Interest and Sinking Fund on the balance of debt includes the sum of about £12,000 in respect of these charges for Demolition work alone. This amount, not being financially productive, can only be regarded as an immense sanitary improvement, enormously contributing to the general health of the community. Taking this consideration into account, the net charge on the rates for Housing alone represents approximately 1½d. in the £.

All the Dwellings have a scullery (not counted as a room) and a separate W.C. and the general scale of rents is as follows :—

| | Ground Floor. | First Floor. | Second Floor. | Third Floor. |
|-------------|------------------|-----------------|------------------|-----------------|
| One Room | 2/6 | 2/- | 1/9 | 1/6 |
| Two Rooms | 3/6 | 3/- | 2/9 | 2/6 |
| Three Rooms | 4/6 | 4/- | 3/9 | 3/6 |
| Four Rooms | 5/6 | 5/- | 4/9 | 4/6 |

STERILISED MILK DEPOTS, ETC.

In the year 1901 Milk Depots were opened by the Corporation for the supply of sterilised humanised milk for those infants whose mothers were unable to suckle them. From 1901 to the end of 1910, 18,331 babies had been fed from these Depots, and this action alone has been responsible for a great decrease in the infant mortality. During the year 1910, 2,724 infants were fed. Other measures taken are those in connection with the purity of the general milk supply, the substitution of ashbins, frequently emptied, for the insanitary foul-smelling ashpits that formerly were attached to dwelling-houses, and the provision of hospital accommodation for those infants attacked during the hot weather with

"summer diarrhoea." The Midwives' Act of 1902 has also helped the good work, and as 75 per cent. of the births are attended solely by midwives, it is essential that these women should all be adequately trained, properly supervised, and alive to the serious responsibility of their calling. All cases of "ophthalmia neonatorum," which so often result in permanent blindness, are notified to the Medical Officer of Health. A trained nurse is immediately despatched to such cases, and, if necessary, the mother and infant are removed to hospital.

MEDICAL INSPECTION OF SCHOOL CHILDREN.

There are over 130,000 school children in Liverpool in attendance at 162 schools, and under the Education (Administrative Provisions) Act of 1907, these children are all medically inspected on entering school life, and again before leaving school. The work is carried out under the supervision of the Medical Officer of Health, assisted by five School Medical Officers, each of whom has a trained Lady Inspector to assist him. In addition there are four School Nurses for the purpose of attending to minor ailments. The parents are notified in all cases where physical defects are found, and the general condition of the children has been immensely improved since this routine medical examination has been in force. About 26,000 children are inspected annually.

WATER SUPPLY.

Liverpool possesses one of the best water supplies, probably the best, in the country. At one time the supply was entirely from deep wells situated in the town and its immediate vicinity. Then a scheme was adopted for conveying the upland surface waters from the moors at Rivington in Lancashire. The

town grew so rapidly however that even with this addition the supply was becoming inadequate, and the Corporation embarked on a scheme for purchasing the whole valley of the river Vyrnwy in Wales, with the surrounding watersheds.

The second pipe line from Vyrnwy was completed in 1905, the cost of that undertaking up to last year



LAKE VYRNWY.

being £2,939,920. The cost of the Rivington Works up to the same period was £1,714,687. The total capital expenditure on the entire Liverpool Waterworks Undertaking was £6,486,893, which sum includes the purchase of the old Water Companies in 1847 and the subsequent extension of distributing mains. Three wells are still retained, *i.e.*, at Green Lane and Dudlow Lane, from which 1,037,299,000 gallons of water a year

are pumped, while the Windsor Well is only used in emergencies. The Vyrnwy scheme, on which work was commenced in 1881, was designed to provide the city with 40 million gallons of water a day. The area of the Vyrnwy ground is 22,742 acres, and that of Rivington 10,000 acres. Lake Vyrnwy's storage capacity is 12,131,000,000 gallons, while at Rivington 4,105,000,000 gallons can be stored. The total quantity of water supplied during last year was 12,071,683,000 gallons, the average consumption per head of the population being 31.72 gallons. The total quantity of water supplied for trade and manufacturing purposes was 3,206,996,000, for shipping purposes 250,981,000, and for public purposes 639,593,000 gallons.

Regarding the quality of the water the late Professor Rubert Boyce, F.R.S., who was the bacteriologist to the Corporation, said that his examinations of the water showed the water as delivered finally to the householder maintains a very high degree of purity.

ELECTRICITY SUPPLY.

The only public service of any size in Liverpool which is not controlled by the Corporation is the Gas Supply, which is in the hands of a company. Electricity is supplied extensively by the Corporation, and is used in the shopping centres for lighting purposes in preference to gas. There are several immense generating stations, the most notable perhaps being that at Lister Drive, near Newsham Park, which is well worth a visit. In the new stations for the destruction of refuse the waste heat is utilized for the generation of electricity. The capital expended on the undertaking up to December 1910 amounted to over two million pounds, the surplus profit after paying all working costs and charges for interest and sinking fund for the year 1910, exceeding

£46,000. The output of electrical energy for the year was 36,089,627 units. The total number of consumers was 7,991, and the equivalent number of 60 watt lamps connected to the supply mains was 458,187. The demand for electrical energy for power purposes steadily increases, and the total h.p. connected is about 12,026. The prices at present charged for electrical energy are — for lighting, $3\frac{1}{2}$ d. per unit; for power 2d. per unit.

TRAMWAYS.

During 1860 a number of persons applied to the Health Committee of the Corporation for permission to lay down rails in the streets at the expense of the applicants. When the subject was under discussion by the Committee, permission was granted by the Road Trustees of the district concerned for the laying of a line of tramways outside the borough boundary, from the borough boundary to the Old Swan. The section of the rail, however, was such that when laid it formed a kind of trough below the street surface, which resulted in numerous accidents to vehicles and injury to horses, and the line became so great a nuisance that it had to be taken up. In 1865 a company was formed under the name of the Liverpool Tramways Company, Ltd., for the purpose of laying tramways within the streets of the City. The lines were handed over to the Corporation on the 1st January, 1880, and the company commenced working them shortly afterwards. Owing to questions arising between the Corporation and the Company with regard to the maintenance of the lines and the introduction of mechanical power, the Corporation decided to acquire the undertaking. This was accomplished under the Liverpool Tramways Act, 1897, the amount of the purchase money being £567,375. After much consideration the Corporation

finally decided in favour of adopting the overhead trolley system of electric traction, on the ground of general efficiency and low initial cost. This system met with much opposition, but was finally adopted, and as the streets are not wide, the road traffic has been greatly inconvenienced thereby.

There are now 116 miles of track in operation, including eight miles in the borough of Bootle, $1\frac{1}{4}$ miles in the urban district of Litherland. There are 25 distinct routes, ranging in length from 3 miles 156 yards to 12 miles 253 yards, the average length of the penny stage being 2 miles 794 yards.

The total capital expenditure to December 31st, 1911, was over £2,000,000. The income for the year, exclusive of interest receivable, amounted to £634,906, and the working expenses to £410,563, leaving a balance of £224,343. Of this £38,244 was applied to the relief of the general rate.

In 1911 the number of passengers carried was 128,625,374, the mileage 12,399,469, and the receipts £601,170, or an increase of over £18,000 over the previous year's figures.

CEMETERIES.

The Corporation has taken over the powers and duties of nearly all the Burial Authorities which formerly existed in the City. In 1908 they purchased the Crematorium at Anfield Cemetery from the private Company which erected the establishment, and since that date they have taken steps to popularise this hygienic method of disposing of the dead.

PUBLIC BATHS.

The City is particularly well-equipped in the matter of public baths, and in the variety of baths provided

will compare favourably with any town in the Kingdom, as will be seen by the following list.

SWIMMING, PRIVATE HOT AND COLD BATHS, at Picton Road, Steble Street, Cornwallis Street, Lodge Lane, Margaret Street, Burroughs Gardens, Speke Road, Westminster Road, Lister Drive, Queen's Drive.

SALT WATER SWIMMING BATHS, at Cornwallis Street, Westminster Road, Burroughs Gardens, Queen's Drive.

VAPOUR BATHS, at Cornwallis Street, Margaret Street, Speke Road, Westminster Road, Lister Drive, Queen's Drive.

SPECIAL STEAM (RUSSIAN) BATH, including Shampooing, at Picton Road.

RAIN AND SPRAY BATHS, at Margaret Street, Beacon Street, Lister Drive, Picton Road, Speke Road, Queen's Drive.

MARKETS.

The markets belonging to the Corporation are six in number, and they were erected at a cost, including purchase of land, of £300,110.

ST. JOHN'S MARKET was erected in the year 1822, at a cost of £48,503. It covers an area of 8,024 square yards, and occupies a prominent situation near the centre of the City. The market is appropriated for the sale of fruit, flowers, vegetables, and other garden produce, meat, poultry, rabbits, and all sorts of provisions, except fresh or uncured fish. Spaces are also reserved for the occupation of farmers who attend the market every Saturday to sell produce from their farms. Owing to its convenient situation the market is extensively used by the public, who find it a great advantage to be able to purchase under one roof most of the articles of food required for daily consumption.

THE RETAIL FISH MARKET was erected in the year

1835, at a cost of £30,389. It covers an area of 2,200 square yards, and is situated in close proximity to St. John's Market.

THE WHOLESALE FISH MARKET was erected in the year 1886 at a cost of £45,215. It covers an area of 2,285 square yards, and adjoins the Retail Fish Market, there being a connecting passage between the two markets. It is appropriated to the sale by wholesale of fish, game, rabbits, and poultry. The principal trade is in fish, for which the market is the great distributing centre for the whole of Liverpool and the surrounding district.

THE WHOLESALE VEGETABLE, FRUIT, AND HAY MARKET was established in the year 1839, and was at that period of very small dimensions, but it has since been extended from time to time, and now covers an area of 22,150 square yards, the total cost of the erection, including purchase of land, being £96,064. The market is situate on the north side of the City, and is appropriated for the sale by wholesale of all kinds of farm and garden produce.

ST. MARTIN'S MARKET was erected in the year 1826, at a cost of £25,743. It covers an area of 4,088 square yards, and is situate on the north side of the City. The market is appropriated for the sale of pedlars' wares and other manufactured goods and articles, and the premises are entirely occupied by general dealers, whose principal business is the sale of second-hand clothing. These dealers provide for the requirements of a great number of poor persons, many of whom reside in the vicinity of the market, and the Corporation have granted the use of stalls and spaces at very low rents.

THE CATTLE MARKET in Prescot Road covers an area

of 37,000 square yards. The market was carried on by a company until the year 1900, when the Corporation purchased the undertaking by agreement at a cost of £38,200. A large proportion of the animals offered for sale in the market are sent from Ireland by boat direct to Liverpool, and there are also considerable quantities of sheep forwarded by rail from Scotland. The total number of animals offered for sale in 1910 was 406,162.

POOR LAW ADMINISTRATION.

Liverpool is divided into three parishes for Poor Law purposes, viz.: Liverpool, West Derby, and Toxteth Park. The parish of Liverpool, administered by the Select Vestry, has fine offices, and an immense Workhouse and Hospital at Brownlow Hill, facing the University. Connected with this institution are Cottage Homes for Children at Olive Mount, Wavertree. The offices of the West Derby Union are at Brougham Terrace, West Derby Road. This is, perhaps one of the largest Unions in the Kingdom, and comprises no fewer than 26 densely populated townships. There are Workhouses at Walton and Belmont Road, an Infirmary at Mill Road, Cottage Homes at Fazakerley, a Hospital for Children at Deysbrook, and an Institution for epileptics at Anfield. The Union offices for the township of Toxteth Park are at High Park Street. The Workhouse is in Southdown Road, and there is a Children's Home at Wavertree. The three Unions combine in supporting a joint Hospital for pauper cases of tuberculosis at Heswall.

MILL ROAD INFIRMARY, which is undoubtedly one of the best Poor Law Infirmaries in the country, contains 901 beds. It was erected in 1894, and is built of brick

on the pavilion system, each block containing four wards. The administration block is in the centre and includes residential quarters for the officials, together with offices, kitchens, and stores. The medical wards contain over 500 beds, and the surgical wards about 200 beds, whilst 60 beds are reserved for special diseases of the eye and ear. A special maternity department is provided with delivery and recovery wards, all fitted on the latest and most approved lines, whilst a separate block is reserved for the treatment of acute cases of mental disease. The operating theatre and sterilizing rooms are splendidly equipped, and about 450 to 500 major operations are performed each year. A complete X ray department has been installed and has proved of the greatest value. A complete new clinical and bacteriological laboratory has recently been provided. On the average, about 6,000 new cases are admitted each year, including almost every variety of illness, with the exception of infectious diseases. Every patient who uses this institution is expected to pay according to his means, but of course, in case of necessity or destitution, no payment is demanded. An excellent training school for nurses is attached, accommodating over 100 nurses. A certificate is awarded after three years' training.

EDUCATION.

ELEMENTARY.

It is not generally understood how, as a result of the Education Act, 1902, the work devolving upon the local education authorities, and particularly in a city like Liverpool, has increased in all directions. The Education Committee are responsible for the maintenance

and supervision of 162 Public Elementary Schools, comprising 445 departments, with accommodation for 132,075 scholars. Of the 162 schools, 58 are Council (or provided) schools, established and directly controlled by the Education Committee, whilst 104 (56 Church of England, 40 Roman Catholic, and 8 Wesleyan or Undenominational) are owned by the respective managers but maintained by the Committee.

Each School, Council and Voluntary, is governed, subject to the general rules laid down by the Committee, by a body of Managers whose duty it is to see that the Regulations of the Board of Education and Education Authority are carried out, also to deal with all questions relating to the appointment and resignation of teachers. The minimum teaching staff to be employed in each elementary School is determined by the regulations of the Board of Education, but to ensure greater efficiency, the Liverpool Committee have adopted a scale which is somewhat in excess of that prescribed by the Government. Altogether there are in the Elementary Schools 3,908 adult teachers, viz :—

| | MALES. | FEMALES. | TOTAL. |
|------------------------|--------|----------|--------|
| i. Head Teachers | 146 | 305 | 451 |
| ii. Assistant Teachers | 688 | 2,769 | 3,457 |

In addition, for the purpose of affording scholars in the upper standards instruction in woodwork and handicraft for boys, and cookery, laundry and housewifery for girls, the committee have in their employ 66 Instructors (34 male and 32 female) with special qualifications for such subjects. The subjects are mainly taught in specially equipped centres, but in the newer schools classrooms have been set apart and fitted for the purpose. Some 23,300 children are under instruction during each year. Provision is also made for

another class of children—those, not being imbecile, who, by reason of some mental or physical defect, are incapable of deriving benefit from the instruction in an ordinary Elementary School. To meet such cases the Committee have established five "Special" Day Schools. Separate sections are provided in each school for physically and mentally defective children. A mid-day meal is supplied, and for the physically defective specially designed couches and wheeled chairs are provided, whilst in addition to the ordinary staff, a trained nurse is appointed to attend to the needs of the children, under the direction of the Medical Officer. Experience has shown that it is almost hopeless to impress upon children suffering from mental defect any abstract ideas concerning, say, numbers. Accordingly most of the school time is given to manual work consisting of wood-work, chair caning, shoemaking and tailoring for boys, and cookery, laundry, needle-work, and clay modelling for girls. Mention may also be made of the Country School for physically defective children at Bowring House, Roby. Open for a period of 20 weeks during summer months the children go out in parties of 50 (boys and girls alternately) and remain five weeks. As much work as possible is done in the open and the children at the end of the five weeks show great improvement.

TECHNICAL.

The technical training of young persons for industrial careers is as a rule deferred until after their primary general education in a day school has been completed. In a majority of cases the youth is left to obtain a knowledge of his trade in the workshop as best he can ; for, in these days of competition and hurry, in many cases

little or no provision is made in the workshop for systematic instruction and training of the apprentices and young workers. For instruction in the *principles* underlying his trade and in the *rationale* of the methods and processes adopted, the youth must take advantage of the technical classes which are now provided in most centres by the Local Education Authorities. These classes are held in the evenings ; and, coming after a hard day's work in the shop, attendance involves a sacrifice of leisure on the part of the young workmen which all of them are by no means prepared to make. A day school of a special character has been established for the purpose of providing a definite practical form of training for students who have completed the ordinary primary school course at the Toxteth Technical Institute, under the name of the *Trade Preparatory School*. Boys entering the school must pass an entrance examination to ensure that they have had a good elementary education, the usual age of entry being from 13 to 15. A two years' course is provided in workshop instruction (in both wood and metal), mechanical and freehand drawing, experimental science, mathematics and other subjects.

The Technical Schools (of which there are in Liverpool, in addition to the Central Technical School, seven Branch Schools in various parts of the City.) provide instruction in connection with a number of different trades. The Branch Technical Schools provide the earlier stages of the work for students in the different branches of the Engineering trade and of the Building trade, more advanced classes for these students being provided at the Central Technical School. At the Central Technical School classes usually provided with laboratories or workshops for practical work,

have been arranged for Mechanical and Electrical Engineers, Plumbers, Carpenters and Joiners, Brick-layers and Masons, Plasterers, Motor Car Engineers, Sheet Metal Workers, Naval Architects, Millers, Bakers and Confectioners, and various other trades, together with classes in Chemistry, Electricity, Mathematics, Geometry, Botany, Physiology, Hygiene, etc. Instruction in Domestic subjects for women and girls is also provided at the various Branch Technical Schools. There are in Liverpool two Schools of Domestic Science specially arranged for the *continuous* training of young girls leaving the elementary schools in a complete course of Cookery, Laundry Work, Housewifery, Dress-making and Needlework, extending from 15 to 20 weeks.

SCHOOL OF ART.

The City School of Art in Mount Street, to which a considerable new extension building has been added, now makes provision of a practical character for the artistic crafts, some of which were previously carried on at the Central Technical School. These crafts include Bookbinding, Letterpress Printing, Lithography and Photo Process work, Painters' and Decorators' work, and Cabinet Making, taught in evening classes by practical men; a well equipped workshop being provided for each craft. The School of Art also provides in day and evening classes not only for the ordinary art studies from Life and the Antique, and the study of Design, but also instruction in Sculpture, in Wood and Stone Carving, Etching, Metal Work, Enamelling and Stained Glass.

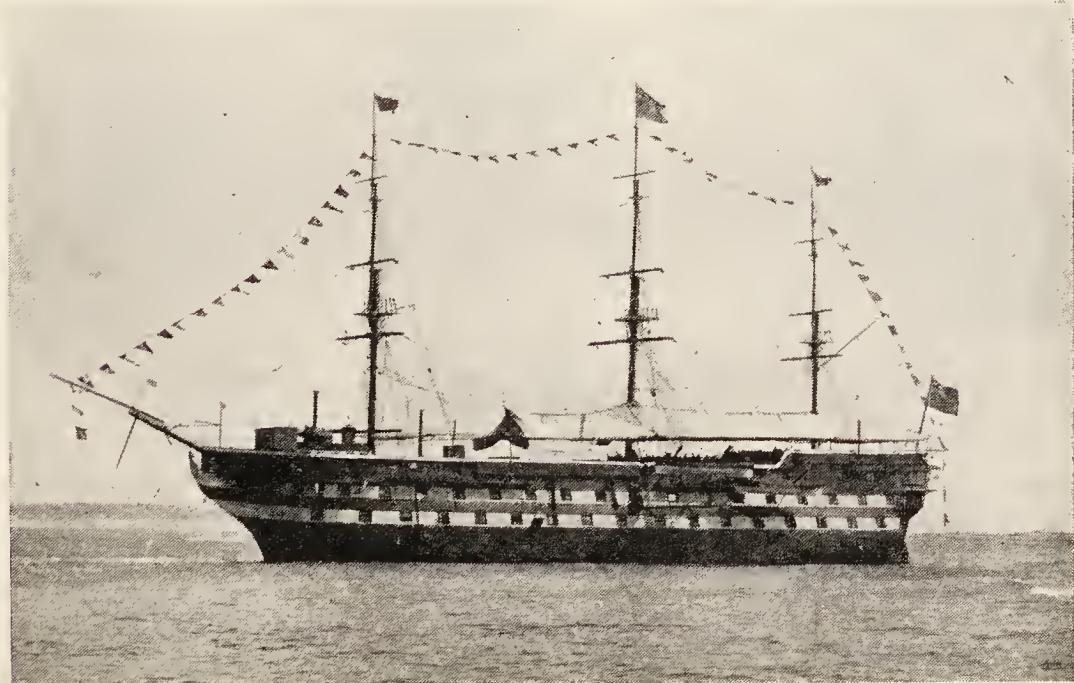
NAUTICAL COLLEGE.

Technical instruction of a special character in connection with the shipping industry is found in the

Nautical College (which occupies a portion of the Central Technical School building) where officers and men of the Mercantile Marine can prepare for their professional certificates, and also receive instruction in other subjects of a special character bearing upon their calling; while in another building the Education Authority have provided a special training course for Ships' Cooks, the certificates issued by the School on the satisfactory completion of the course as tested by an independent examination, being recognised by the Board of Trade.

H. M. S. CONWAY.

The School ship "Conway" stationed in the Mersey, is designed to train and educate young men with a view to them becoming officers in the Merchant Service. There are six nominations annually (two each term) to the Royal Naval College, Dartmouth. Two years on the "Conway" count for apprenticeship as one year's sea service.



SCHOOL SHIP H.M.S. "CONWAY."

BLUE COAT SCHOOL.

The sterling worth of this institution has been proved over and over again, and many of its old boys are now prominent and well respected citizens. Established in 1709 by a private citizen, for the education of orphan and fatherless children and of those who have indigent but honest parents, the school was removed in 1906 from School Lane, at the back of Church Street, to a fine new building at Church Road, Wavertree. Visitors are admitted from 10 to 12 and from 2 to 4 o'clock every day except Mondays, Saturdays and Sundays.



CHAPTER III.

A SKETCH OF THE MEDICAL HISTORY OF LIVERPOOL.

BY THOMAS H. BICKERTON.

The medical history of Liverpool practically dates from the year 1745. Prior to that time we have scrappy information respecting the sick and the poor, and of the means and regulations for dealing with such, but of Medical relief there is a complete blank. Thanks to the work of Mr. Touzeau among the Municipal Records, which date back to 1551, and to the publication of his book "The Rise and Progress of Liverpool, from 1551 to 1833," it is possible to trace the evolution of Liverpool public opinion regarding the treatment of the sick and the poor.

I should like to acknowledge my indebtedness to Mr. Touzeau, and to say that I have appropriated and incorporated in this contribution, conclusions which he has drawn from his extensive reading of the Town's records. His source of information is the most reliable that it is possible to get, and his opinions therefore most worthy of acceptation. Mr. Touzeau points out that between the years 1551 and 1647, no mention is made in the Municipal records either of medical men or of medical appliances of any kind. This is a striking fact, and perhaps points to the extreme modesty of the medical men of that day in deprecating not only all

personal reference to themselves, but also their methods of treatment. If so, it is much to be regretted, for we have now no means of learning who they were. Speculation concerning them is not proof, but the probabilities are that there were "giants in those days" as well as a century later, at which time we have some definite data to go upon.

But if Liverpool was exempt from the infliction of doctors, it certainly was not free from epidemics of plague and pestilence, which ravaged it with great severity. In 1540, the town was nearly depopulated by a plague or sweating sickness, while in 1548, and again in 1558, 250 inhabitants succumbed to it in each year.

As in 1565, the population was estimated at only 700 to 800, the death roll was most serious, and we read that:—

"A provision was made against infection from the Plague to the effect that all persons who might happen to be visited with the Pestilence should depart out of their houses and make their cabins on the Heath,* and remain there from Lady Day until St. Michael's Day, and during the remainder of the year to live in the back part of their houses and keep the doors and windows shut on the street side until the Mayor gave them license to open them, and no fires were to be lighted except between 12 and 3 o'clock in the afternoon, &c."

Mr. Touzeau's comment on these visitations is that "it is quite possible the insanitary condition of the town and the habits of the people contributed not a little." What their habits were is related in reference to the subject of unemployment, "the cause of this unfortunate state of affairs was apparently attributable to intemperance with its consequent idleness and disinclination to work". . . . "for so much as the

* St. George's Hall and St. John's Gardens now occupy part of the Heath.

exceeding number of Alehouses and tippling-houses within the town is thought to be not only a nourisher of idleness, but also a great occasion of many other disorders and inconveniences." Possibly the custom of attendance at funerals may have conduced to the spread of infection. In 1617 it was ordained by the Town Court :—

" That when it pleaseth God to call any neighbour to His mercy that every neighbour dwelling in the street where the party deceased did dwell, that of every house one shall go to accompany the corpse to the Church or else pay 6d. to be collected by Mr. Mayor's appointment."

In 1530, Henry VIII granted to the sick and impotent permission to beg, and in 1536, Magistrates and Clergy were ordered to make collections for their relief, but information as to provision for the sick is unobtainable between 1551 and 1745.

In 1679, the Mayor, John Chorley, gave fifty pounds with which to purchase land for the benefit of the widows and children of deceased and decayed seamen, and next year four acres of the Common were enclosed.

In 1684, Mr. David Poole built twelve Almshouses on the site now occupied by the Haymarket; while in 1698, Captain Tarleton bequeathed fifty pounds, the interest of which was to be spent in bread and given to the "decayed and impotent" seamen, their widows and children.

These were, however, provisions for the poor, not the sick, as also was the gift of £100 by Dr. Silvester Richmond in 1692, for the erection of Almshouses on Shaw's Brow. This is the first time the name of a medical man appears in these records, and it does so, not because he was a medical man, but from his official position, having been Mayor in 1672. Dr. Edward Norris, who was the member of Parliament elected in 1714 on

the accession of George I., and represented the town until 1722, is remembered also for his political and not medical office. Silvester Richmond was a member of an old Liverpool family, and is frequently mentioned in Squire Nicholas Blundell's Diary, as the owner of race-horses. He died in 1692, and on a brass plate which was formerly screwed to a seat in the chancel of St. Nicholas's Church, was the following inscription :—

“Here lieth the body of Silvester Richmond, Professor of Physick and Chirurgery, who after near thirty years indefatigable care and successful practice in this town and country, at last exhausted that life which had been so carefully employed in the preservation of many others. He died the 16th and was interred the 19th April, 1692.”

The Diary above mentioned is interesting reading. The entries date from 1702, and to it we owe the knowledge that a considerable number of physicians and surgeons, and at least one “Chirurgeoness” resided in Liverpool at that time. But the knowledge is limited to their names, and there were no public registers, newspapers, or directories to supply the details we fain would know. The Squire of Crosby was sufficiently unprejudiced to consult them all in turn, and met them professionally and socially on the most friendly terms, for he “took wine” with all and sundry, including the veterinary surgeon.

It is of course possible that the sick were tended in Pool House, Pool Lane, South Castle Street, which was rented in 1597. Although styled the “House of Correction” it was not a disciplinary Institution, but a Home of Reception for the poor of the town. More accommodation becoming necessary, a Workhouse was built (1731) in Workhouse Lane (now College Lane), the corner next Hanover Street.

It is extremely difficult to believe that no provision for the sick existed in the town for nearly two centuries after the commencement of the records ; but the fact remains that there is no documentary evidence of such until about the middle of the 18th century. With the establishment of the Infirmary begins not only our knowledge of the systematic care of the sick, but also knowledge of certain members of the medical profession.

The proposal to erect a Public Infirmary dates from about the year 1744. In April, 1743, a field known as the "Oyl Mill Field," fell out of lease, and two years later, viz., April 3rd, 1745, this field, together with the 'waste' before it, was granted by the Council to Trustees, as the site for the intended Hospital or Infirmary, for a term of 999 years. Part of the site was occupied by the old Almshouses erected by Dr. Silvester Richmond, and these were demolished to make room for the new building. This "Infirmary for the Sick and Hurt" was the tangible expression of the benevolent spirit which appears to have pervaded all sections of the community, and its founding marks an epoch in the history of Liverpool. Its conception was of the most cosmopolitan and liberal character. It was to be "free to all persons, to whatsoever place they belong, if they are proper objects ;" or in other words it was to be "open to the sick and lame poor of any Country or Nation." A subscription list was opened, to which the clergy, physicians, surgeons, merchants, tradesmen, and some of the neighbouring gentlemen, generously contributed.

In July, 1745, the foundation of the Infirmary was laid on Shaw's Brow, on the identical ground which 101 years before had been the scene of Prince Rupert's ad-

vanced works, from which he had assailed the rebellious little town which that eminence commanded, and evidences of his encampment were exhumed in the process of digging these foundations. But the year 1745 is memorable for more than the founding of the Infirmary at Liverpool. We remember it as the year of the great rebellion ; and the work was only well begun, when “tidings reached Liverpool which sent the worthy Mayor of that year post haste to London with the unwelcome message, which he had the painful honour



PUBLIC INFIRMARY, 1749 (CENTRE), AND HOSPITAL FOR DECAYED SEAMEN, 1752 (WINGS).

of being the first to convey to the Government, that Prince Charles Edward had landed and advanced as far as Preston. All the interest of the inhabitants now turned to soldiering ; a regiment of foot, the Liverpool Blues, was raised, and afterwards did good service at the taking of Carlisle ; while 300 men besides were enrolled for the garrison duty of the town. The natural effect was, the progress of the building was seriously interrupted, and it was not until the end of 1748 that it was complete and ready for occupation.”

The original Infirmary was a single square, or nearly

square building, with a handsome front of brick and stone. It had a large garden behind, used principally for convalescent patients, and had an extensive court in front, enclosed with iron rails and a gate. It was opened on March 25th, 1749, by the Right Honourable Edward Earl of Derby. The building which cost £2,618 was designed for the accommodation of 200 patients, but at the time of opening, only two upper wards were furnished, with 30 beds. Over the gateway were placed the following lines :—

“ Oh ! ye whose hours exempt from sorrow flow,
 “ Behold the seat of pain, disease, and woe ;
 “ Think while your hands th’ entreated alms extend,
 “ That what to us ye give to God ye lend.”

The Officers for the first year included the Earl of Derby, President; Mr. Foster Cuncliffe, treasurer; Mr. Charles Goore and Mr. Edward Deane, deputy-treasurers; Mr. Samuel Ogden and Mr. Thomas Seel, auditors; Dr. Walter ~~Greene~~, Dr. John Kenyon and Dr. Thomas Robinson, physicians; Mr. James Bromfield, Mr. Thomas Antrobus, and Mr. William Pickering, surgeons; and the Rev. Matthew Lowe, chaplain. When the last-named gentleman died in 1767, it was remarked that up to the time of his death, no officiating Clergyman of the Established Church had died in Liverpool during the last forty years.

Concerning five of the first six medical officers appointed to the Infirmary we know very little. Dr. Walter Green we are told, was a man most eminent in his profession, and well known for his translations of Homer and Virgil. He resigned his position of senior physician to the Infirmary in 1774 owing to blindness, probably from cataract, for in July 1786, we learn that Dr. Green “ having had his sight restored

by a gentleman of this town " was again attending his patients as usual.

Of Dr. John Kenyon we know nothing beyond the fact that he died on October 15th, 1791, in the 80th year of his age, but this fact is noteworthy, for the majority of the medical men of that day succumbed before the age of 50.

Our knowledge of Dr. Thomas Robinson is extremely limited. In May, 1760, he married Miss Jemima Ganand, and we know that he had at least two daughters. It is probable that he was a fairly wealthy man, judging by inference rather than by knowledge. Dr. Robinson remained on the staff of the Infirmary till the year 1770.

It is perhaps chiefly because Mr. Bromfield was the uncle of the distinguished surgeon, Henry Park, that he specially claims remembrance to-day. He is mentioned as being an Alderman, and at the time of the founding of the Infirmary, subscribed £32 : 6 : 0 to its funds. He remained on the staff of the Infirmary from 1749 to 1764. Dr. Bromfield was apparently one of those interested in the salt water bath "at the Bath Hall and Coffee House," a description of which is found in 'Williamson's Advertiser' for June 18th, 1756. Possibly this bath was used by patients at the Infirmary, for an item in one of the early reports of the charity reads as follows:—"Dr. Bromfield, for the use of Hot and Cold Baths, $\frac{1}{2}$ year £6 : 0 : 0.

Mr. Thomas Antrobus, was with one other exception (Mr. Lyon) the only surgeon in Liverpool at that time who did not practise Pharmacy as well as Surgery. He retired from the staff of the Infirmary in 1770, and in 1783 had retired from practice. He contributed "An Account of an Amputation of a Leg, without any

subsequent Hæmorrhage," to Med. Obs. and Inq. Vol. II.

Little is known of Mr. Pickering beyond the fact that he was one of the first surgeons to the Infirmary, and that he was one of the subscribers to a public fund which was raised in 1775, "for such occasional acts of benevolence as may be useful to the soldiers who are or may be employed in his Majesty's service in America."

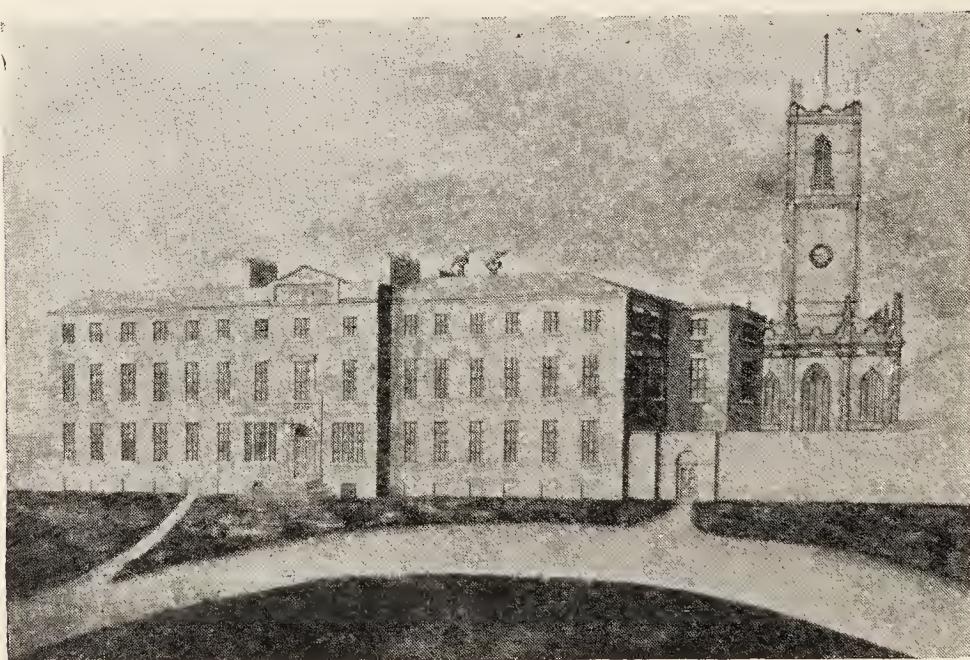
In January, 1776, he died at Bath, where he had gone for the recovery of his health. Mr. Pickering served the Infirmary from 1749 to 1768.

As already stated, the Infirmary was a single building, but illustrations of it are apt to mislead. The two wings, though architecturally connected with the central main building, (the Infirmary) were really no part of it. Though called "The Seamen's Hospital" they were not erected for the accommodation of the sick, but were simply Almshouses or "habitations for poor decayed seamen, their widows and children." Reference has already been made to gifts establishing this charity, as far back as 1679.

In 1739, buildings on the 'Waste' were proposed. The designs were formed in 1747, but not carried out until 1752, when the Commissioners agreed with the Trustees of the Infirmary for ground adjoining the Infirmary at an annual rent of £20, for 999 years. One thousand five hundred pounds were expended on the buildings. It was supported principally by the monthly allowance of 6d. which every seaman, registered at the port, was by act of Parliament in the reign of George II., obliged to allow out of his wages. There was also a permanent fund from unclaimed prize-money, of ancient date, which amounted to upwards of £20,000, appropriated in aid of this charity; as, besides the

several persons who occupied these Almshouses, there were seven hundred monthly pensioners, two hundred of whom belonged to the port.

The Infirmary had for many years connected with it a Lunatic Asylum and a Lock Hospital, and there are good grounds for thinking it was the first provincial hospital to establish such institutions.



THE LUNATIC ASYLUM, INFIRMARY GROUNDS.
ST. JOHN'S CHURCH ON RIGHT..

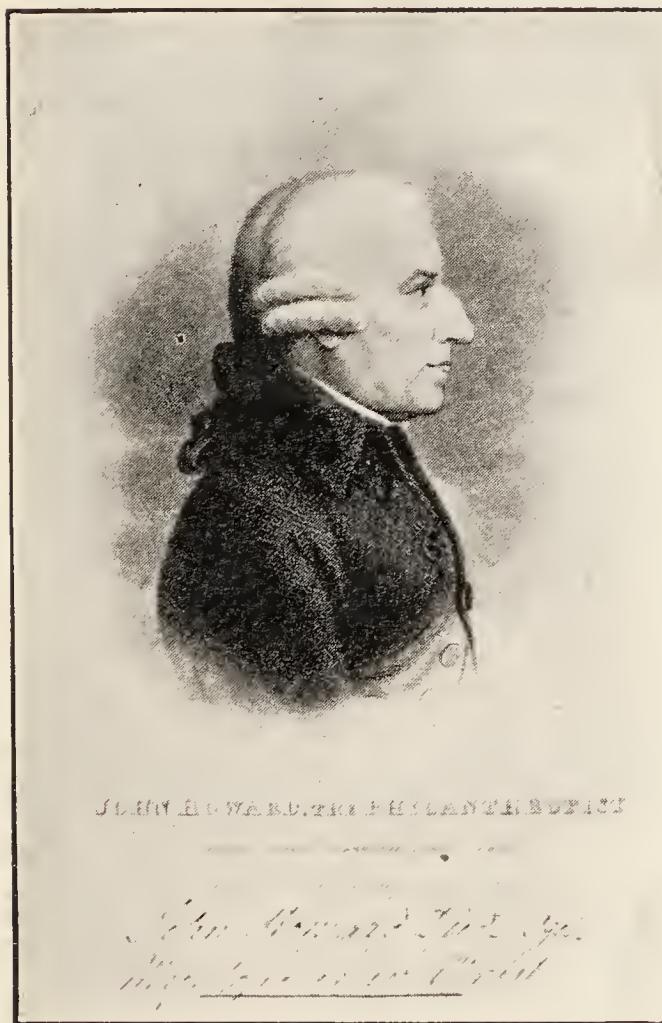
On March 1st, 1790, a meeting was convened at the Infirmary, to consider the propriety of erecting an Asylum for Lunatics. A plan was prepared and approved, and about two thousand pounds subscribed towards the building, which it was estimated would cost from £4,000 to £4,500. The Asylum was built in the Infirmary gardens, near to the old Infirmary on Shaw's Brow. It was capable of accommodating from sixty to seventy patients, and was opened in the year 1792.

Dr. James Currie was the prime mover in this laudable

and much needed undertaking, and it was so successfully carried through, and gave such general satisfaction, that several County Hospitals took it as a model, and erected Asylums of a similar nature. In Liverpool, as elsewhere, the maintenance was derived from the payments of the patients, or the parishes to which they belonged. The accounts and reports of the Lunatic Asylum were published with those of the Infirmary.

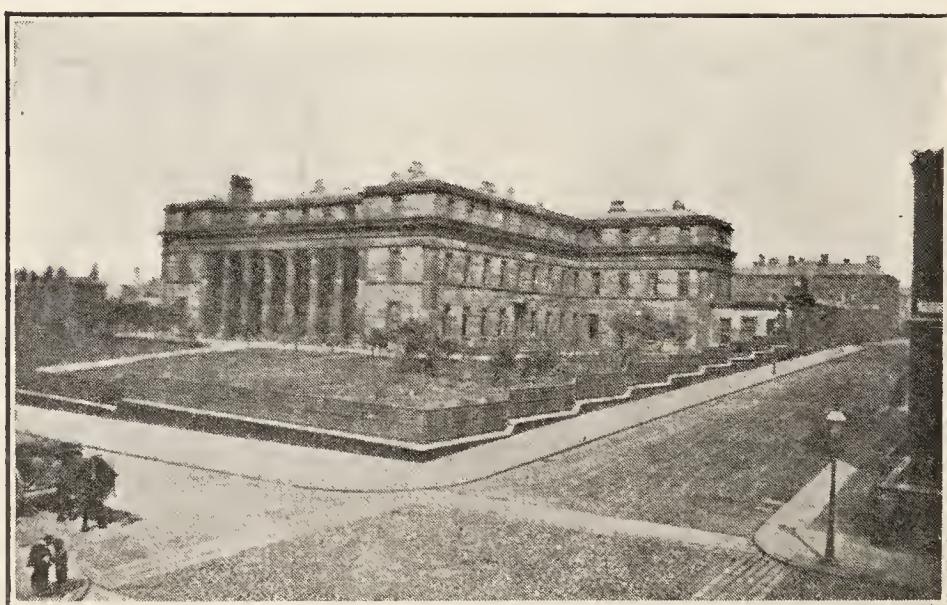
When, in 1824, the new Infirmary was opened in Brownlow Street, it was necessary also to contemplate the erection of another Asylum. This was undertaken, but it proved a severe tax upon the funds of the Infirmary. By the aid of a number of ladies who volunteered their services in promoting a bazaar, a sum of

£2,821 was realised to defray the additional expense. But the public spirit of these former managers of the Infirmary was abundantly rewarded in 1881, when the land on which the Lunatic Asylum stood was acquired by the railway, (L. & N.W. Ry.), for the money formed the nucleus, and a good nucleus too, of the building fund for the present Infirmary.



The original Asylum opened in 1792, appears to have been built at the suggestion of John Howard the philanthropist, who promised a subscription to the funds for its erection. When the Asylum was closed in 1881, the care of the lunatics was taken over by the City and County Councils. The Poor Law authorities have undertaken the Lock cases.

To return to the Infirmary itself, when in 1820, the site was required for St. George's Hall, a new Infirmary was erected in Brownlow Street, the Corporation

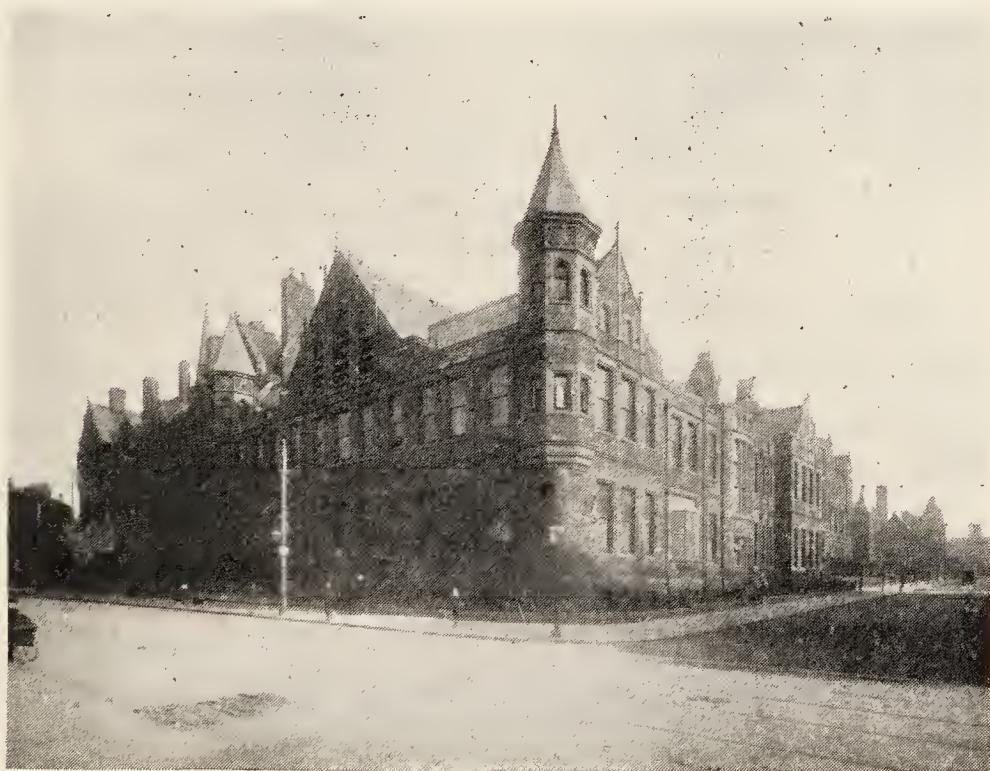


THE INFIRMARY, 1824; ROYAL INFIRMARY, 1851.

giving an annuity of £210 in addition to the new site. The foundation stone was laid by Lord Stanley in 1821. The building was designed for the accommodation of about 220 patients, and was opened in 1824. The original building opened in 1749 cost £2,618; the new building opened in 1824 cost £20,426. In 1862 Mrs. Thornton, of West Derby, gave ten thousand pounds to endow a gynaecological ward.

On this site, greatly extended, the foundation

stone of the present fine building in Pembroke Place, adjoining the University, was laid by the Earl of Derby in October, 1887. During the three years occupied in its erection the patients were accommodated in the Lunatic Asylum, and in temporary sheds in the Asylum grounds—the inmates of the Asylum having been removed in 1881. The building, which cost £181,000, was opened in 1890 by H.R.H. the late Duke of Clarence, and afforded accommodation for 292 surgical, medical and gynaecological cases.



OUTPATIENTS' DEPARTMENT, ROYAL INFIRMARY.

In July, 1909, the foundation stone of a greatly needed out-patient department of the Royal Infirmary was laid by the present Earl of Derby. This department, now completed, has inscribed on a tablet:—

“This building was erected by Subscribers to the William
“ Mitchell Banks Memorial Fund, the Bickersteth family,
“ R. Brocklebank, and many others. The Foundation

"Stone was laid on the 7th July, 1909, by Edward, Seventeenth Earl of Derby, and the building was opened on the 29th March, 1911, by Osbert, sixth Earl of Sefton."

Hospitals, like books, however up-to-date in construction when erected, rapidly become obsolete. It speaks well for the Committee of Management of the Royal Infirmary, that Sir Henry Burdett, K.C.B., K.C.V.O., writing in 1910, was able to say that "although the present buildings are 20 years old, they contain practically every facility and accommodation afforded by the most recent hospital buildings in this district of England." This, of course, refers to surgical, medical, and gynæcological cases alone. Funds are now urgently required for a block for the indoor treatment of "special" diseases—eye, ear, nose, throat, and skin, as well as for clinical Laboratories.

The building is acknowledged by experts to be an example of what is desirable in hospital construction, and it is constantly visited by those who are interested in such matters. Over 3,000 patients pass through its wards annually, and about 20,000 others receive attention in the Casualty department.

From its foundation the Infirmary has included among its medical officers, physicians and surgeons whose reputation and talents are held in national esteem. Among others may be remembered Matthew Dobson, Park, Alanson, Houlston, Currie, Bostock, Brandreth, and Bickersteth.

Matthew Dobson, M.D. (Edin)., F.R.S., was the son of the Rev. Josiah Dobson, a Nonconformist minister in Yorkshire, and was originally destined for the ministry, but preferring the study of medicine, he became a student in the Medical School of Edinburgh, where he graduated. He settled at Liverpool, where he acquired

a considerable practice, and his appointment as physician to the Infirmary dates from 1770. Dr. Dobson was a prolific writer on various medical topics, and many of his contributions are preserved in the "Medical Observations and Enquiries" and the "Philosophical Transactions," and we find two essays by him in Enfield's History of Liverpool. Of him Dr. Owen T. Williams recently wrote:—

"To Matthew Dobson we
 "owe the discovery of the presence of sugar in diabetic
 "urine. In 1774 he crystallized out the sugar and
 "examined its properties. He also showed the char-
 "acteristic appearance of the serum in these cases.
 "When Rollo nineteen years later introduced the die-
 "tic treatment of the disease, he acknowledged his in-
 "debtedness to Dobson's work, which enabled him to
 "discover this form of treatment. Dobson was among
 "the first to recognise that renal calculi were pro-
 "duced by a disordered condition of the body and were
 "not due, as then thought, to the excretion of earthy
 "matter ingested with the food."

Fletcher writing in 1857 said:—"One of his communications to the Royal Society is of special local interest as it details some experiments performed in the 'sweating room' of the Infirmary. This little room, nine feet square, was heated till the thermometer hanging from the ceiling marked 224°; and even then, Dr. Dobson states, there was no painful sensation of heat. His colleague, Mr. Park, went in at a temperature of 202°, his pulse, ordinarily about 65 per minute, quickened in ten minutes to 120; a thermometer, the bulb of which was alternately put in his hand and in his mouth, stood only at 99½. Bees' wax melted, and albumen coagulated when exposed in a tin cup, though it remained fluid when

" left in the depression made by taking off the shell
 " of an egg and allowing some of its contents to escape
 " so as to leave a little cup of membrane. Mr. Park
 " it seems remained in long enough for three eggs to
 " be cooked simply by the heat of the chamber. These
 " he consumed, and on coming out, walked to Everton
 " in a hard frost, and felt no bad effects. "

Dobson recorded a case of internal hydrocephalus treated with mercury, which communication resulted in his receiving an interesting letter on the subject from John Hunter. Dobson's connection with the Infirmary was unfortunately short (1770-1780), but in that time his work was epoch-making, and gave the Infirmary its first noble name. He resigned his appointment at the Infirmary in 1780, owing to the state of his health. He left Liverpool and settled at Bath, where he died in 1784, and was buried in Walcot Church. At the time of his death he was collecting memoranda with the object of writing a medical and natural history of Liverpool. We have with us a great grandson of Dr. Matthew Dobson, Dr. F. W. Lowndes, a much esteemed member, and surgeon to the Lock Department of the Royal Infirmary, from 1875 to 1898. To Dr. Lowndes the community is greatly indebted for the present sanitary method of taking the oath in Courts of Justice.

Dr. John Bostock, graduated in Edinburgh in 1769, subsequently taking an honorary degree at Leyden. He commenced practice in Liverpool, and was appointed one of the physicians to the Infirmary in 1770. Dr. Cullen, under whom he had studied in Edinburgh predicted that his talents would secure for him a brilliant future; a prediction which was not realised, for he died in 1774, at the age of thirty, of inflammation of the

bowels. To the witty agreeable companion he joined the man of science, integrity, benevolence and charity. At an early period of life, he acquired eminence in his profession, to which "had he not been snatched off by an unexpected stroke" he would certainly have proved an honour and an ornament. A local poet of his day thus eulogises him :—

" Nipt in the prime of life's short seasoned span
 " But ripe in all the virtues of the man
 " Drops worthy Bostock ; but he drops to rise
 " To full perfection in celestial skies."

He married early, and his son, Dr. John Bostock, M.D., F.R.S. was a distinguished physiologist and scientific chemist. He was the author of "An essay on Respiration," Liverpool 1804; "Remarks on the Nomenclature of the New London Pharmacopœia" read before the Liverpool Medical Society, 1810; "System of Physiology" 1824; etc.

Thomas Houlston, M.D. (Leyden, 1764). The position of physician to the Infirmary, left vacant by the death of Dr. Bostock, March 1774, was contested by Dr. Henry Richmond, who received 103 votes, and Dr. Houlston, who received 92. Later in the year, on the resignation of the senior physician, Dr. Green, who retired owing to blindness, Dr. Houlston was appointed physician to the Infirmary, at the age of twenty-nine.

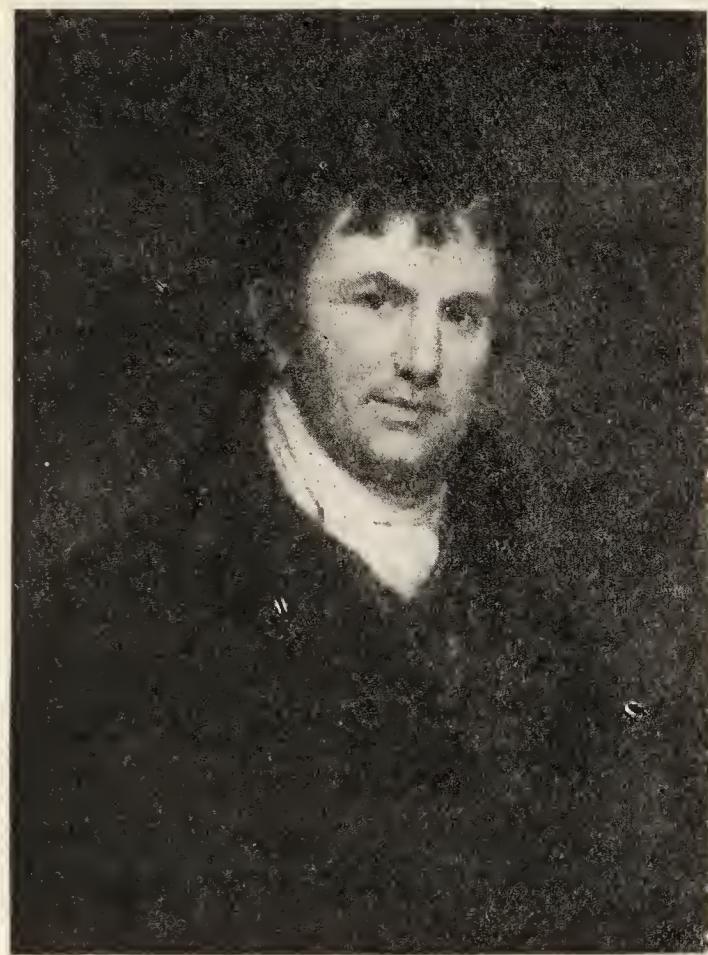
Dr. Houlston was one of the first men in England who endeavoured to spread the knowledge as to the best methods of restoring animation in persons apparently dead from drowning or hanging. The Royal Humane Society in London was founded in 1774, but in the year before, Dr. Houlston had published "Some plain directions for the recovery of those apparently drowned." It is said that in order to secure the greatest

publicity of his methods of treatment, he had copies of the instructions printed, and distributed by the Justices of the Peace at the licensing of public houses in November of the same year. A further note respecting Dr. Houlston is to the effect that he also wrote on the prevention of death from excessive drunkenness, and that copies of this paper were printed and distributed in Liverpool—a reflection it would seem on the popular habits of the town at that time—but we are not told whether he adopted the same means of distribution as in the first instance. It would have been a satisfactory method of reaching some of the persons most concerned. This article was written in response to an appeal made in the press to the humanity of the Faculty to teach the public the “best methods of preventing the fatal effects of excessive drinking” and was called forth through the death at the Infirmary of a dock labourer who had swallowed a quantity of rum. Dr. Houlston died on the 16th of April, 1787, in the 41st year of his age. He was universally lamented, being a man of great professional as well as general knowledge, and was distinguished for his philanthropic and benevolent spirit.

Joseph Brandreth, M.D., (Edinburgh, 1770), whose life is given in the Dictionary of National Biography, was a man of national reputation. Of a Cheshire county family, and born in 1745, he was the prime mover in the creation—1778—of the Liverpool Dispensary in Prince’s Street, and with Dr. Jonathan Binns and Dr. James Worthington, was appointed honorary physician to it, holding the position until 1780, when he became attached to the Infirmary. He was strongly imbued with the efficacy of cold water in the treatment of fever. After a long and distinguished

career in Liverpool, he died in 1815, at the age of seventy.

James Currie, M.D., (Glasgow, 1780), was born at the Manse of Kirkpatrick, Fleming, Annandale, on May 31st, 1756. His father wished him to enter the medical profession, but like many other lads, he had a desire to "see the world," and his father thinking it wiser to gratify his wish in this



JOSEPH BRANDRETH, M.D. (EDIN.),
1746-1805.

respect, sent him to Virginia. The climate was bad, and young Currie nearly died of intermittent fever soon after his arrival. It was at the time of the civil war, and in 1776, he petitioned the Colonial Government for permission to leave the country, together with about forty other young men. After many adventures and narrow escapes, he finally reached England; he then went to Edinburgh, and attended classes of the University, his intention being to take his degree in medicine and then return to Virginia. He graduated at Glasgow in 1780. Some time during this year he settled in Liverpool, and before he had been here six months he was unanimously elected physician to the Dispensary.

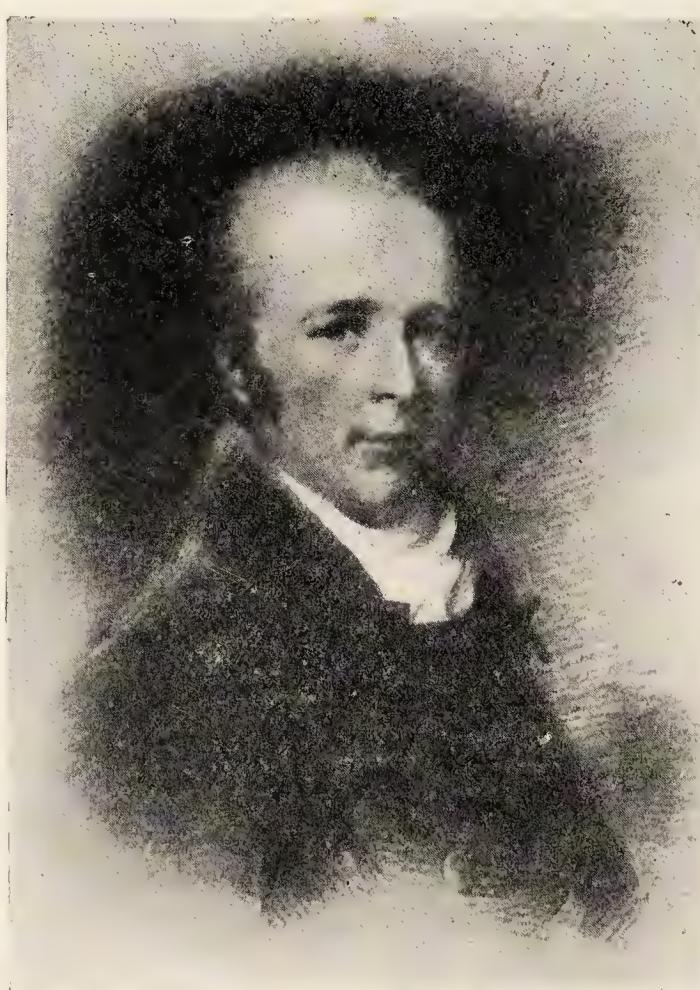
Dr. Currie appears to have stepped at once into the front rank of his profession, for when in 1781 an epidemic of small-pox was raging, he was the one appointed to draw up an address to the inhabitants, advocating a general inoculation. He was appointed physician to the Infirmary in 1786, and during his term of office succeeded—with the help of his colleagues—in effecting many much needed reformations. He took a leading part in the establishment of the Lunatic Asylum in

connection with the Infirmary ; and was one of the first to speak against the pernicious practice introduced in the new streets on the south side of the town of building blind alleys, which would not allow of a free passage of air through them.

Dr. Currie's predictions were quickly fulfilled. One author thus describes the resulting state of things :—

JAMES CURRIE, M.D. (GLASGOW), F.R.S.,
1756-1805.

"The consequences of overcrowding, filth, want of light, "etc., were already frightful in the town. Fever naturally "took up its abode among the dark dens where the ash-pits "sent their liquid filth oozing through the walls and their "pestiferous gases flowing into the windows of the densely "packed houses. In 1788 the physicians of the town "brought this under the notice of the Mayor



"and magistrates, and in 1802 the Corporation applied
"to Parliament for an Improvement Bill, wisely seeking
"in framing it, information and suggestions from the
"Medical officers of the Infirmary and Dispensary. An
"interesting report, containing enlightened views on
"sanitary matters was drawn up by Dr. Currie and his co-
"adjutors the old cry of rights of property was,
"as usual, raised in defence of the wrongs of property. . .
". . . The attempt to remove the evil failed a
"fever hospital was erected to mitigate the scourge. . . ."

As in the case of the Lunatic Asylum, the Fever Hospital owes its origin mainly to the wisdom and enterprise of Dr. Currie. The plan appears to have been furnished by Dr. Ferriar of Manchester.



THE WORKHOUSE, BROWNLOW HILL, 1771.

The Workhouse, formerly situated in Workhouse Lane, (Now College Lane), was in 1771 removed to Brownlow Hill, and at the time of its opening was said to be the largest in extent in England.

The Fever Hospital was built in 1806, on the east side of the Workhouse, entirely isolated from all other buildings, and appointed by the parish of Liverpool for all infectious fever cases. Medical service was rendered in rotation by the six physicians attached to the Dispensary, who were responsible for the entire management. Great opposition was at first made by



FEVER HOSPITAL, BROWNLOW HILL.

the poor, who objected to leaving their own habitations, however squalid, to be nursed among strange surroundings.

Dr. Currie never flinched in his advocacy of the

Emancipation of the Negro—thereby risking his popularity and his practice—and it was he who drew up the resolutions which were passed by the Dissenters of Liverpool on the Test and Corporation Acts. His name and fame were not confined to Liverpool, and in 1790 he was elected a Member of the London Medical Society, in 1792 a Fellow of the Royal College of Physicians, Edinburgh, and Fellow of the Royal Society in 1793. In 1802, Dr. Currie received the freedom of Liverpool. It is impossible in a paper of this kind to do more than indicate the numerous enterprises and episodes with which Dr. Currie's name is associated, but the record of his life, written by his son, William Wallace Currie, is a work which will well repay perusal.

In 1797, Dr. Currie published his principal medical work, entitled "Medical Reports" dealing mainly with the subject of "affusion" in fever. His greatest literary achievement was his "Life of Burns" which is still considered one of the standard editions. He also edited Burns' Works. His labours on behalf of the French prisoners in the year 1800, nearly brought him into conflict with the Government, and he was "censured for his interference by Sir Joseph Banks and

treated as a Jacobin by the commission." But Dr. Currie could console himself with the knowledge that the abuses which he had exposed were remedied. In the establishment of the Athenaeum and the scheme for the Botanic Gardens, Dr. Currie was greatly interested and gave his valuable services to both. In 1803, he again showed signs of that consumption which had threatened him in early life, and finding it impossible to remain in Liverpool, he retired to Bath in 1804. The change proved beneficial for a short period, and in August 1805, he started on a journey to Dover; but had only reached Sidmouth when his strength failed, and he knew that the end had come. He hastened to complete the arrangements for a further edition of his "Medical Reports" and dictated to his son an account of his political life and opinions.

The old adage that the good—or at any rate the distinguished—die young, seems to have been singularly true with regard to members of the medical profession in Liverpool in days gone by, for Dr. Thomas Houlston, Dr. John Bostock, as well as the subject of these few remarks, all died in the prime of life, the latter being only forty-nine when he died on August 31st, 1805.

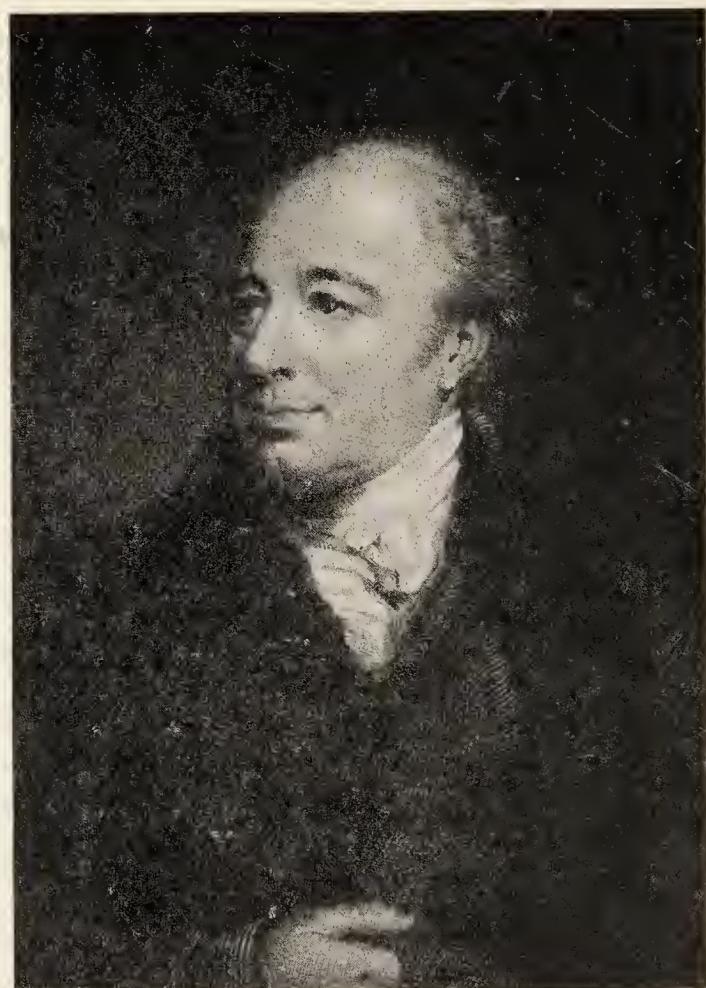
Henry Park, surgeon, was born on March 2nd, 1745, in a house in Water Street. His father was a member of a well known Liverpool family, and was an eminent surgeon of his day. At the age of fourteen he was apprenticed to his uncle, Mr. Bromfield, then one of the surgeons to the Infirmary, and remained with him for three years. After his Liverpool apprenticeship he went to London, and resided for three years with Percival Pott, of St. Bartholomew's, and afterwards spent a season at the Hotel Dieu, of Rouen,

under the teaching of M. le Cat. He then returned to this town and commenced practice as a partner with Mr. Alanson ; and in the following year, though not more than twenty-three years of age, he was appointed surgeon to the Infirmary, an office which he held for thirty-one years. He settled in Bassnett Street, a locality then considered so far from

the centre of the town as to endanger his practice.

During nearly the whole of his practice, Mr. Park kept an account of all the midwifery cases which he attended. This record, which he denominated his Book of Genesis, is still preserved in the Medical Institution. . The accuracy of this register has often supplied useful information as to births which the imperfect parish registers of that period had failed to give. From it we learn that he attended at the birth of the late Right Hon. William Ewart Gladstone, at 62, Rodney Street, on December 29th, 1809.

In person Mr. Park is described as having a short round figure, and a bright good natured face, and a never-failing flow of good spirits. He used to say that



HENRY PARK, 1745-1831.

he had broken “every bone in his body, excepting one arm and one head.”

As his colleague, Dobson, on the medical side, had produced epoch researches in Diabetes and other medical subjects, Park still further enhanced the fame of the Infirmary by his brilliant pioneer work in the surgery of joint diseases. The one great improvement in surgery with which his name will ever remain connected, was projected probably before 1781. It occurred to him that in some affections of the knee and elbow, in which amputation had hitherto been necessary, surgery had another resource, not yet attempted, by which limbs might be preserved “with such a share “of the motions which Nature had originally allotted “to them as to be considerably more useful than any “invention which Art has hitherto been able to sub-“stitute in their stead.” This expedient being “the total extirpation of the articulation.” He expected to obtain a cure by ankylosis, but in a case which he quotes, where the whole articular end of the Humerus was removed in a case of compound dislocation of the elbow, all movements were entirely regained. There can be no doubt that Park’s long and honourable connection with the Infirmary was a potent factor in adding to its reputation

Mr. Park’s work on the “Excision of Carious Joints” passed through several editions. His claim to entire originality of design in the performance of this operation is unchallenged, though he himself mentions that Mr. Filkin, of Northwich, had excised a knee joint in 1762. In 1830, owing to failing health, he retired from practice, and went to live at Wavertree, where he died on January 28th, 1831, from schirrus of the pylorus, in the eighty-sixth year of his age.

In addition to having medical charge of the French prisoners of war confined in the Tower, Water Street—numbering at one time as many as six hundred—Mr. Park was professionally engaged in two celebrated duels which took place in Liverpool. We read

“ Lieutenant Sparling, of the 10th regiment of Dragoons, was paying his addresses to a young lady residing in Bold Street. An anonymous letter received by him induced him to withdraw from his engagement. This led to a bitter correspondence, and Lieutenant Sparling went abroad for some months. The young lady’s uncle, Mr. Grayson, felt the insult very warmly. He was an entire stranger to Lieutenant Sparling, but did not hesitate to publicly brand him as a scoundrel and a villain, which ultimately led to a challenge from Sparling. The parties met about seven on Sunday morning, February 26th, 1804, opposite the old Chapel in Toxteth Park, and thence proceeded down the retired valley of the Dingle. Lieutenant’s second was Captain Colquitt, R.N., of the frigate *Princess*; Mr. Grayson’s, Dr. Macartney, a physician of eminence in the town. Harry Park was also in attendance. At the first fire Grayson fell mortally wounded. Lieutenant Sparling and Colquitt were tried at Lancaster Assizes before Sir Allan Chambre, the result being an acquittal for both.”

The other duel was the affair between Major Brooks and Colonel Bolton.

“ The parties had been arrested and bound over to keep the peace on one occasion, and before the year elapsed, the Major publicly insulted Colonel Bolton in open day in Castle Street, a challenge from Colonel Bolton being the result. The twelve months’ bond expired on December 20th, 1805, and on the evening of that day the meeting took place in a field near Fairclough Lane, then a quiet rural road leading from the top of Pembroke Place to Low Hill. The spot must have been very near the site of St. Jude’s Church. Major Brooks was accompanied by Mr. Forbes, and Colonel Bolton had Mr. Harris for his second. Mr. Park was taken up by Colonel Bolton in his carriage as he passed his door. When they arrived on the grounds it was so dark that they could not see to load the pistols. Candles were therefore procured, and here in the drear, cold, December night the tragedy proceeded to its denouement. What a scene for the pencil of a Salvator Rosa! The generous, public-spirited, kind-hearted British merchant, Colonel Bolton, who was actually the benefactor of the man who had insulted him, compelled by the code

" of honour of the day to imperil his life because the person
 " whom he had fostered and cherished chose to treat him
 " with base ingratitude. Nemesis however claimed her
 " victim. The Major fired first without harming the Colonel,
 " who returned the shot hitting his opponent in the eye,
 " and killing him on the spot. The fatal report might have
 " been heard at the Major's house, which stood at the corner
 " of Daulby Street, not more than two hundred yards distant.
 " At the coroner's inquest a verdict of wilful murder was
 " found; but no prosecution was ever instituted, public
 " opinion being entirely in favour of Colonel Bolton."

* * * *

" Among the officers commanding the regiments raised
 " in Liverpool, for the defence of the country during the
 " threatened Napoleonic invasion in 1803, are the names
 " of Joseph Brandreth, surgeon, and James Dawson, assist-
 " ant surgeon, 1st Battalion of Liverpool Volunteers,
 " raised at the expense of and commanded by Lieutenant
 " Colonel Bolton; Henry Park, surgeon in the Liverpool
 " Volunteer Artillery, commanded by Peter Whitfield
 " Brancker, and George Catlow, surgeon to the Liverpool
 " Independent Rifle Corps."

John Lyon, M.D., was appointed Surgeon to the Infirmary in 1768, and held this post until 1810. He has not left any published works, but, according to Mr. Alanson, one most important improvement in surgery originated with him.

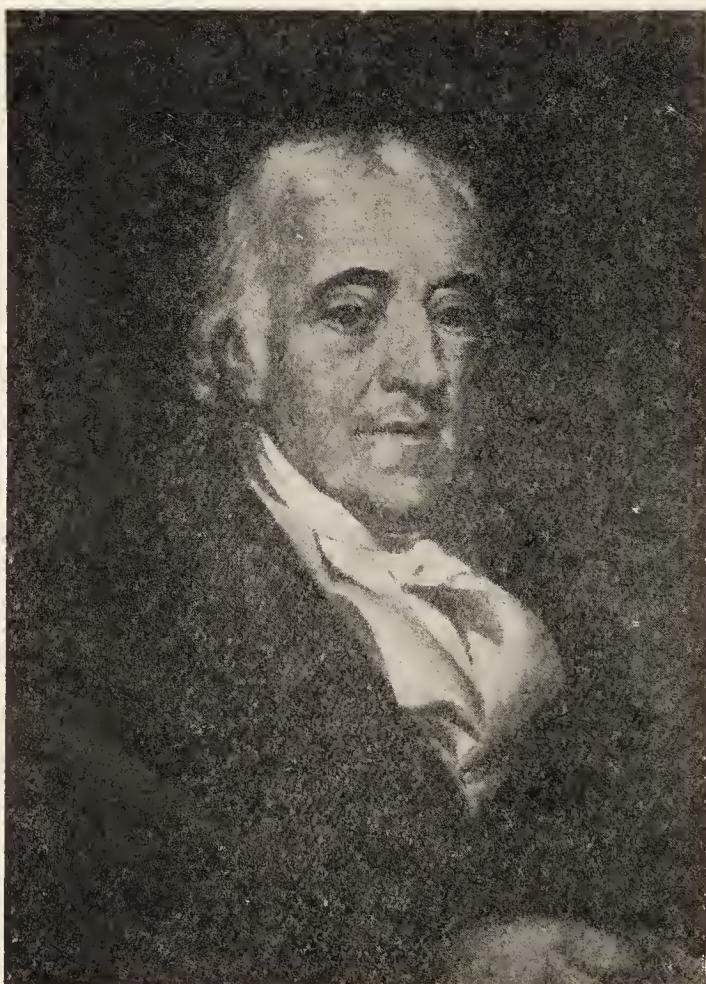
The design of omitting all intermediate dressings was suggested by Mr. Lyon to Mr. Park, and he was the first who placed the skin in a line on the face of the stump, with the view of uniting the whole by the first intention. (Vide "Practical Observations on Amputation" 2nd edition, p. 40.)

There can be no doubt that the adoption of this plan contributed greatly to the success of Alanson's amputations, and that the publication of his cases added in no small degree to render it universally acceptable.

In conjunction with his colleagues, Park and Alanson, John Lyon has the honour of being an originator of the first Medical Society in Liverpool, the object being the purchase of books.

Mr. Edward Alanson, whose name has been mentioned in connection with his colleague and partner, Mr. Henry Park, is remembered on account of an im-

proved method of amputation which he practised. It is not claimed that he invented this particular method but he reduced the different designs of many practitioners to one single plan of operation, and thereby rendered amputation a comparatively safe procedure, one of the greatest arguments in its favour being that it greatly reduced the sufferings of the patient. His appointment to the Infirmary dates from 1770, and he remained on the staff until 1794. Amputation at the shoulder joint was first introduced into the Infirmary by Mr. Alanson, in the year 1777, on a man who had his arm shattered while ramming down the wad of a cannon. He interested himself in



EDWARD ALANSON, 1747-1823.

all philanthropic schemes, and was one of the promoters of the Blind Asylum. He possessed advanced views respecting sanitation and hygiene and advocated the frequent use of lime washing, and the introduction of iron bedsteads in all hospitals. He also suggested the establishment of a "house of recovery" somewhere in the country, in connection with all large hospitals, and

preached the gospel of fresh air at all times. An excellent oil painting of Mr. Alanson is in the possession of Dr. Owen Bowen, to whom it was presented by Miss Alanson, and to whom I am indebted for the print. There can be no doubt about the pioneer work in medicine, surgery, and sanitation contributed by the staff of the Infirmary

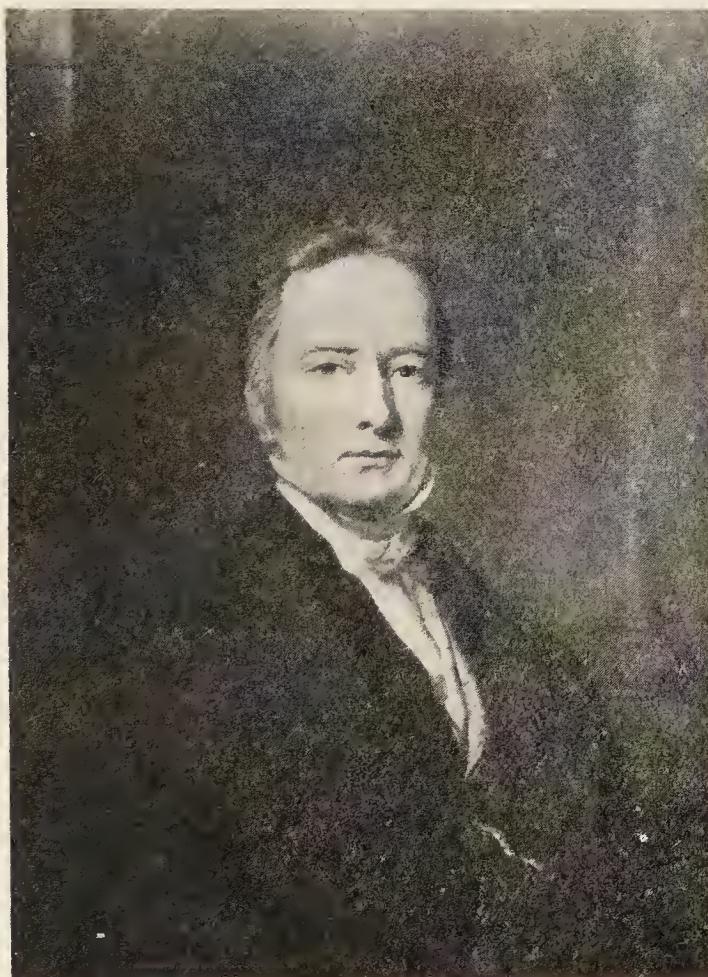
during the latter period of the eighteenth and early part of the nineteenth centuries.

Among the best known Liverpool names is that of Bickersteth. The first of the family to settle in Liverpool was Robert Bickersteth, the son of a medical man residing in Kirkby Lonsdale, Westmoreland.

Robert Bickersteth was appointed to the office of

surgeon to the Infirmary in 1811, and from that day to this—comprising a century—a representative of the name has not been absent from the surgical staff of the hospital. This is probably a record, and one, we hope, as firmly established as the Royal Infirmary itself.

Robert Bickersteth was attached to the Royal Infirmary for forty-six years. He died on April 16th,



ROBERT BICKERSTETH, 1787-1875.
57

1857. It would be impossible to give here any detail of his long and honourable career, prosecuted from its commencement to within a few days of his death with an energy and integrity which secured the success and honour which he so truly merited. His son, Edward Robert Bickersteth was on the staff of the Infirmary for fifty-two years, The present representative of the family is Robert Alexander Bickersteth, whose appointment dates from 1891.

Quite recently, the Bickersteth family have laid the city of Liverpool under a special obligation by a gift of £10,000, in memory of Edward Robert Bickersteth, towards the erection of the lately opened Out-patient Department of the Royal Infirmary.

1757. Eight years after the opening of the Infirmary there appeared in the Liverpool Gazetteer, May 6th, 1757, a letter from Mr. Matthew Turner, Surgeon, of John Street—now North John Street—urging the necessity of a lying-in hospital. The suggestion fell upon stony ground. Not until forty years had elapsed was a Ladies' Charity for the relief of poor married women at their own homes founded, and not until another forty-four years had passed did a Married Lying-in Womens' Hospital come into existence.

Recently, Sir William Hartley, one of Liverpool's most generous benefactors, has offered to erect a Maternity Hospital free from special restrictions—a pressing need.

1773. Continuing the narrative in chronological order, here may be mentioned the amusing fate which befell the discovery by Dr. Houlston in 1773 of the existence of a mineral spring in St. James' Quarry. To the pride of being the second seaport in the world Liverpool might have added that of being a health-

giving resort. The possession by this spring of water of qualities such as Dr. Houlston described would, if judiciously advertised, to-day raise an obscure village to a position of abounding prosperity. The water had fine qualities, its taste at first cool and refreshing was afterwards austere and inky. It imparted warmth to the stomach and an inebriating sensation. It was beneficial in almost all diseases, and excellent for those who ‘fell away’ without cause. It was specially useful if “the stomach had been washed with chamemel tea or cleansed with a gentle puke.” Alas his words of wisdom were disregarded. Twenty years later we read “the quarry still remains in a state of rusticity, the spring is almost inaccessible. No attempts have been endeavoured to make it convenient or in any manner beneficial to such of the unfortunate inhabitants as may be willing to use it, nor could strangers inclined to come to Liverpool be accommodated.”

THE DISPENSARY.

1778. The Dispensary was established in 1778, at No. 25, Princes Street—a small rented house—with a view of administering medicines and advice to such persons in the hour of sickness who might be unable in consequence of their poverty to obtain relief. The parish allowed one hundred guineas annually towards the support of the charity, and the rest was defrayed by voluntary subscriptions. The medical staff originally consisted of three honorary physicians and an apothecary. The physicians and surgeons attached to the Dispensary during the first years of its institution included some of the best known men of the day, Drs. Joseph Brandreth, Jonathan Binns, James Worthington : Messrs Wright Gleave, Edward Alanson, and James Gerard.

In the original printed Report of the Dispensary of 1779 we find the names of sixteen medical men in the list of subscribers. These probably include all the physicians and surgeons then resident in Liverpool, and were as follows:—

| | |
|--------------------|----------------------------|
| Dr. Jonathan Binns | Dr. — Wainwright |
| „ Joseph Brandreth | „ James Worthington |
| „ W. F. Blencowe | Mr. Richard Gerard |
| „ Joseph Camplin | „ Wright Gleave |
| „ Matthew Dobson | „ James Leigh (apothecary) |
| „ Thomas Houlston | „ William Moss |
| „ John Kenion | „ Henry Park |
| „ Henry Richmond | |

Increase of patients soon rendered a larger building necessary. The new Dispensary, opened in 1782, was built on the south side of Church Street, a most advantageous position, near the present site of the Athenæum. The medical officers to the charity were expected



OLD DISPENSARY, CHURCH STREET, 1798.

to attend the sick poor at their own homes or in the work-house, the inmates of "The Blue-coat Hospital, (really a school), the Borough Gaol, the House of Correction, and the Lock Hospital." The office evidently was no sinecure. It was considered an excellent form of charity

to be adopted, especially in places where there was no Infirmary. It certainly was so from the point of view of the public. If the number attending the Dispensary be any guide to the ability of the medical staff, it must have been of a very high order.

Two explanations have been offered for the magnitude of the numbers attending. On the one hand they were taken as indicating the need for such medical attention. In “A History of the Ancient and Present State of Liverpool” published in 1795 we read :—“There is “no Charity in Liverpool that does greater honour to the “feelings of the inhabitants than the Dispensary. . . . “There cannot be a greater proof of the utility of this “establishment, and the relief it has given and still con-“tinues to give to the afflicted indigent, than the “number which have been annually benefitted since its “institution in 1778. It appears from an accurate “statement that 172,373 persons have been cured. . . . “from 1778 to 1794, being on an average 10,767 diseas-“ed and afflicted objects every year.”

On the other hand, in “Liverpool, its Commerce, Statistics and Institutions, 1825,” pp. 273, 274, Smithers after stating that applications for medical and surgical attendance by the Dispensary from 1778 to 1823 were 634,052, wrote as follows :—“When the great number “of applications for medical aid is compared with the “population, it must awaken surprise. The facility “with which tickets are obtained”—patients were “admitted on the recommendation of the magistrates, “clergy, church wardens, parish committee, or any “subscriber to the charity—“there is every reason to “fear, induces many to apply whose stations in life “enable them to pay for regular advice. Such persons “should seriously consider that they act unjustly and

" fraudulently : these charities were instituted for
" the benefit of the poor only. Such conduct, origina-
" ting in covetousness or avarice, is a greater crime
" than that which induces the half-starving thief to
" rob for his daily bread. The supporters of these
" institutions should investigate as much as possible,
" although it cost them some trouble, the cases of the
" several applicants."

These statements, made 117 and 87 years ago respectively, still represent opinion to-day. The use and abuse of medical charities still awaits settlement. As to the voluntary system, Dr. John Rutter "a celebrated physician of his day, and deservedly esteemed as a sound and sagacious physician," held no uncertain opinion, an opinion based on an experience of thirteen years attendance at the Dispensary as one of the physicians. He was in his seventy-sixth year when in his address to the medical men of Liverpool, delivered at the opening of the Medical Hall in Mount Pleasant, (1837) an address which has proved prophetic, he said :—
" In this place you may perhaps be able, sooner or
" later, to originate measures which may terminate
" in procuring for all who are engaged in the service
" of our public institutions, a fair and just remuneration
" for their labours. I can now only briefly glance at
" this subject, and must leave it for your future con-
" sideration. Some time must elapse before you can
" prevail upon the inhabitants of Liverpool to think,
" that it is neither just nor reasonable that so many
" of you should be expected to employ the best and
" most active period of your lives in labouring for the
" public without reward. Unrewarded duties and
" services such as yours, so extensive and so unremitting,

“ have not yet been expected from any other portion
“ of the community, and ought not to be expected
“ from you.”

In 1829, the Church Street Dispensary was sold, and the establishment removed to a new Dispensary in Vauxhall Road, and called the North Dispensary. In later years two other Dispensaries were opened and named respectively the South and East Dispensaries—the former at 1, Upper Parliament Street, and the latter at 160, Richmond Row. A time came when a scheme was proposed for associating the Dispensary with the Infirmary. The idea was that the Dispensary should constitute an external department of the Infirmary.

ASYLUM FOR THE INDIGENT BLIND.

1790. To Liverpool belongs the honour of having being the first town in the United Kingdom to establish a school for the Blind. The idea of an Institution for the relief of the numerous and indigent blind originated in 1790 with Mr. Edward Rushton—father of Mr. Edward Rushton, sometime stipendiary magistrate in Liverpool, and great grandfather of Commander Edward Astley Rushton, R.N., who recently married the daughter of our President elect, Sir James Barr.

Edward Rushton at the age of nineteen, when on a voyage to Dominica, contracted ophthalmia which broke out among the slave cargo, and was deprived of sight. In the early part of 1790, Rushton regularly attended an association consisting of ten or a dozen individuals who assembled weekly for the purpose of



EDWARD RUSHTON.

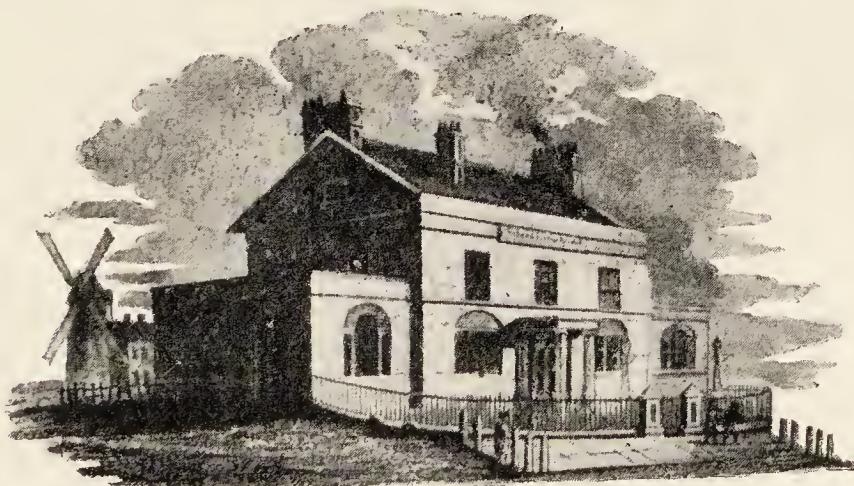
literary discussion. During a discussion on the disposal of some small donations which had been received by a then recently established society, and not required, the idea occurred to Rushton that the small donations thus declined might be utilized by the formation of a fund for the blind. He mentioned the matter

at the time, and shortly after wrote two letters. In the first he wrote :—“Among the various calamities by which poor human nature is baffled, perhaps there is not one which upon a close investigation would be found more truly deplorable than that of the loss of sight. He who is in full possession of this cheering sense can have but a very inadequate idea of the state of mind which is generally produced by a total privation.” In a second letter written in the same year, he sketched “the outline of an institution by which it was hoped that the pecuniary distresses and consequently the gloom of the sightless might in some degree be alleviated.”

These letters were submitted to the above mentioned society ; the suggestion was unanimously approved,

and copies of the letters circulated. Among others who received a copy was Mr. John Christie, a blind teacher of music. To him, Rushton says, occurred "the happy idea of having a place appropriated for the use of the blind wherein by gratuitous musical instruction they might soon be enabled to provide for themselves."

The idea when brought to the notice of Mr. Edward Alanson, surgeon to the Infirmary, was taken up by him and other benevolent gentlemen. In 1791, premises were taken in Commutation Row, Islington, and "The School of Industry for the Indigent Blind" otherwise known the "Asylum for the Indigent Blind"



SCHOOL FOR THE BLIND.

was launched. Among the officers appointed when the institution was finally established were, Messrs. H. Park, E. Alanson, J. Lyon, M.D., Joseph Brandreth, M.D., and Jonathan Binns.

The establishment was conducted "on a principle different from that of any other in the kingdom ;" "the blind are neither fed nor lodged ; they receive bread and beer every Sunday, and the rooms have good fires ; it is a sort of manufactory, where every person is paid in proportion to his labour, with this distinction,

"that masters are employed to teach them at the charge of the charity, and the several goods so manufactured are afterwards sold to the best advantage. This greatly lessens the parish expenses, which would otherwise cause an advance on the different taxes imposed on the inhabitants for the support of the poor."

The benefits of the Charity were not restricted to Liverpool. Between 1791 and 1812, of 236 persons admitted, only 65 belonged to Liverpool. The premises were utilized for about ten years, but in 1800 a larger building was erected on the south side of London Road. "The musical services of the blind pupils proved so attractive that it was determined to build a church, which, besides serving the purpose of the inmates, might prove beneficial to the funds of the institution."

The Church was built in Duncan Street East, now Hotham Street, at the corner of Great Nelson Street, in 1819. Later the site was required by the London and North Western Railway, and in 1850 the Church was removed to Hardman Street, and again erected exactly as it had stood in Hotham Street for thirty years. The portico facing north is said to be a copy of that attached to the Temple of Jupiter Panhellenius in the island of Ægina. The buildings alongside, constituting the 'School for the Blind' were erected with all modern improvements, to take the place of the old buildings demolished in London Road. Edinburgh and Bristol followed the example set by Liverpool and established similar institutions in 1793, and to-day there are thirty-seven schools for the education of the blind scattered through the kingdom, two being in Liverpool.

LIVERPOOL INSTITUTION FOR CURING DISEASES OF THE EYE.

1820. Nearly thirty years elapsed after the establishment of the Asylum or School for the Blind before any public step was taken to provide for the prevention of blindness. On June 12th, 1820, a meeting of gentlemen took place at the King's Arms, Mr. William Rathbone in the Chair, when it was unanimously resolved : " That an institution for the relief of the poor afflicted with diseases of the eye be established in this town, and recommended to the support of the public." The officers for the first year included Mr. William Rathbone, President ; Mr. William Cromer, Treasurer ; Mr. P. W. Brancker, jun., Secretary ; Dr. Norris, Physician ; Mr. Joseph Brandreth and Mr. Loftus, Consulting Surgeons ; Mr. Ralph Brackenbury, Operating Surgeon and Surgeon in Ordinary. The premises of the Institution were at 20, Basnett Street, and were open for the admission of patients on Tuesdays, Thursdays, and Saturdays.

LIVERPOOL OPHTHALMIC INFIRMARY.

1820. Two months later, August 20th, 1820, a second eye hospital was established under the name of the Liverpool Ophthalmic Infirmary, with premises in Slater Street. The staff consisted of Dr. Traill, Physician ; and Messrs. Thomas Christian, James Dawson, and T. F. Hay, Surgeons.

THE DISPENSARY FOR DISEASES OF THE EYE.

1838. In December, 1838, "The Dispensary for Diseases of the Eye," 5, Marybone, was opened by R. Hibbert Taylor, M.D. The Committee consisted of Rev. Jonathan Brookes, Hugh McNeill, Dr. Ralph, George J. Duncan, Robert Dirom, and the Surgeon,

R. Hibbert Taylor, M.D. The first report appeared in 1841, after two years' work, in which upwards of 2,000 persons had been treated as out-patients, funds not being available for beds. The establishment of the dispensary was due to the fact that there had been "great increase of the working classes in the northern districts" of the town.

INSTITUTION FOR CURING DISEASES OF THE EAR.

1839. An Ear Institution was started as a private undertaking in 1839 by Mr. Hugh McNeill, one of the surgeons to the Liverpool Ophthalmic Infirmary. In the year following, 1840, it was taken over by a Committee and in 1841 the two institutions, viz, the Liverpool Ophthalmic Infirmary, and the institution for curing diseases of the ear, were amalgamated, under the title of the Liverpool Eye and Ear Infirmary.

THE LIVERPOOL MEDICAL SCHOOL—EARLY DAYS.

The superstitious reverence for the dead, and the pronounced antipathy to the mutilation of the human body after death were originally almost insuperable barriers to the study of anatomy. Enlightened communities sometimes gave the medical profession the bodies of criminals. In 1678, we read that the town of Edinburgh gave them "a malefactor's body once a year."

The Act of George II, that the bodies of murderers should be given up to be anatomised, did little to supply the need, for it created such a feeling of repugnance, that people naturally objected to the body of any deceased relative being dissected, and so placed in the category of criminals. This inevitably led to body-snatching and the "resurrectionist." Prior then to 1832 the position of the anatomist may be defined

as being between the devil and the deep sea. On the one hand the legislature expected medical men to be trained and equipped in the art of medicine and surgery—on the other it prevented the possibility of such training. The language of the law was this:—" If you are ignorant we will punish you ; and if you exert yourself to procure the knowledge requisite to your profession we will punish you also."

In the matter of surgical training Liverpool was well to the fore in these early days, and supplied at least one martyr to the cause of anatomical progress. As early as 1825, Mr. Huskisson, M.P. for Liverpool, presented to the House of Commons a petition from the Medical Philosophical Society, stating the difficulties they experienced in procuring anatomical subjects and praying for such an alteration of the law that a supply of dead bodies might be obtained. At this time there were only twenty schools in England in which anatomy was taught and dissections carried on, viz., twelve in London and eight in the provinces. Two of these were in Liverpool, under the management of Drs. Formby and Gill—the local public teachers of anatomy—and the average number of pupils under both was forty. But comparatively few of them were able to acquire in Liverpool a due knowledge of practical anatomy owing to the expense and risk of pursuing such investigations under the regulations. " Subjects " had to be obtained for the private dissecting rooms which existed in Seel Street and Pomona Street, and while the most prolific source was the parish cemetery many " subjects " were also imported from Ireland. Dr Gill was on one occasion prosecuted by the Crown for having a dead body on his premises, found guilty, and sentenced "to a fine of thirty pounds to the King,

and to be imprisoned until the fine was paid." The chairman in passing sentence said that the question before them was, "not whether the law was inconsistent or defective, but whether it had been infringed. There might be a good reason for altering the law, but as the law now stood it was their duty to see that it was obeyed."

A consequence of the above mentioned risks and expense was that some students were forced to go to Dublin and a few to Paris to acquire the essential basis of surgical skill which could be much more cheaply obtained even in a foreign land. A circumstance which added to the difficulty of procuring subjects for the Liverpool Schools of anatomy may here be mentioned.

On an October afternoon, in the year 1826, three casks, labelled "Bitter Salts," were delivered at the Liverpool Quays for shipment to Edinburgh. The "Salts" having apparently lost their savour, the casks were opened, and eleven dead bodies, salted and pickled, were found therein. Inquiry elicited the fact that they came from the cellar of a highly respectable academy for young gentlemen in Hope Street—a suggestive name—kept by the reverend divine, Dr. McGowan. Investigation of the premises resulted in the finding of "four casks all containing human bodies, and three sacks each containing a dead body." In all, twenty-two bodies, pickled and fresh, were found in the cellar, which, with the eleven found at the quay, made a total of thirty-three. Dr. McGowan's explanation of the circumstances was found satisfactory, in that he had some time previously sublet the cellar to a person who, he understood, carried on the oil trade.

Interference with the export of "Bitter Salts" to Edinburgh, for use in private dissecting rooms, may have

led indirectly to the Burke and Hare murders, 1827-28. Hare admitted to thirty-three murders. In 1831 occurred the Williams and Bishop murder in London, and the Legislature recognized that if bodies for dissection were not forthcoming by legal methods, murder would ensue. In August, 1832, the Anatomy Act passed, and the autumn of 1834 saw the Liverpool Royal Institution School of Medicine and Surgery—so named from the fact that the lectures were given in the Liverpool Royal Institution rooms—formed.

For ten years the Medical School remained in these quarters, but in 1844 it was transferred to a building specially erected for it in close proximity to the Infirmary, and its name became "The Liverpool Infirmary School of Medicine." The erection of this building in 1844 was made possible by the liberality of a few individuals. In 1846 the Trustees of the Infirmary voted a sum of £500 for its completion. Again in 1873, a further sum of £5665 : 4 : 6 was raised for its extension and improvement. When the time came to develop the educational facilities of the town, no body of men took a more active part in pressing the claims of scientific education than the medical men who guided the destinies of the School of Medicine.

For many years after the charter founding University College was granted, the Royal Infirmary School of Medicine, though acting as the Medical Faculty of the college, with representation on the Senate of the college, had maintained an independent existence with full powers of self-government. In time it fell into line with the other faculties of the university, and its financial administration was transferred to the central authority.

1834. The second general hospital established in

Liverpool was the Northern Hospital in 1834. It was rendered necessary by the growth of the town and the great additional suffering entailed in conveying cases of injury to the Infirmary in Brownlow Street.

Donations and subscriptions to the amount of £2,580 enabled its promoters to carry out their plans, and "a large house belonging to R. B. Hollinshead, Esq. (who liberally contributed the first half-year's rent as a donation) was taken, at the end of Leeds Street, and opened on the 10th of March, 1834." The medical officers appointed were Drs. Sillar, Squires and Reynolds, physicians, and Messrs. Gill, Banner, and Wainright, surgeons. The money subscribed only permitted the provision of 33 beds at first, but in less than three years the adjoining house was taken, and room for 50 beds was thus obtained. In 1843 a piece of land in Great Howard Street, so named after Howard, the philanthropist, was granted for the erection of a more commodious building; and on May 14th, 1844, the first stone of the Northern Hospital was laid, and in September of the following year it was opened for the reception of patients. The total cost of the building was £10,500, and it was capable of accommodating 170 patients.

The old Northern Hospital buildings were vacated on July 30th, 1900, and through the munificence of a well-known Liverpool philanthropist, Mr. Benn Wolfe Levy, a fine new pile of buildings was erected in its place. The new hospital was opened by Princess Louise on March 13th, 1902, and is now known as "The David Lewis Northern Hospital."

1841. The third general hospital established was the "Southern and Toxteth Hospital, Greenland Street, and it owes its origin mainly to the efforts of Drs. Minshull, Grindrod, Petrie and Churton. The foundation stone

was laid in 1841 and the building was opened on January 17th, 1842.

It consisted of one story only. A second storey was added in 1849. In this year the great singer Jenny Lind, then at the height of her fame, gave her services in aid of the charity, and succeeded in handing to the funds a contribution of £1,261.

This hospital had the distinction of being the first in the United Kingdom to allocate a special ward for the treatment of children—the George Henry Horsfall ward.

The foundation stone of the present building at the corner of Hill Street and Caryl Street, was laid by the Earl of Derby in 1867, and when opened by H.R.H. Prince Arthur, Duke of Connaught, received the title of the Royal Southern hospital.

Richard Bolton

1846. In the year 1846, a certain Dr. Reid who had a surgery at the corner of Derby Road and Strand Road, Bootle, utilized part of it as a dispensary. He appears to have laboured single handed, but he was happy in having friends who sympathised in a practical way with his desire to do still greater things. A sum of money left to the Rev. John Crump by a Mr. Robinson J.P., "became the nucleus of the funds of the first movement with the dispensary." The dispensary was moved to a cottage in Berry Street, and provision made for 4 or 5 beds. The outcome of this dispensary was the present Bootle Borough Hospital, the foundation of which was laid by the Earl of Derby on August 24th, 1870.

1851. The exceedingly popular and useful institution, the Infirmary for Children, began its existence in a very modest way. It was promoted by Dr. Alfred Stephens, of 4, Upper Parliament Street, in 1851, the funds being provided by Mr. Matthew Gregson, who was president of the institution from 1851 to 1876. It was the only provincial hospital devoted entirely to children.

The building first used was a small private house in Upper Hill Street. Within three years a move to a larger house, 48, Great George Street, was made. Until 1856 only out-patients were relieved, but in that year the increasing number of patients rendered another migration necessary. A house in Hope Street (No. 58) was rented, and for the first time in-patients accommodated.

In 1866 the present site in Myrtle Street was obtained, and on June 23rd in that year the late Duke of Saxe-Coburg, then Duke of Edinburgh, laid the foundation stone of the Infirmary for Children, which has recently been superseded.

In 1880 the committee reported that "the attendances reached the extraordinary total of 29,250." Notwithstanding the various suggestions made for reducing the frequency of attendance and the imposing of a limit (first of fifty, then of sixty) to the number of new cases seen on any one day, there was a steady increase till the maximum was reached in 1896.

Overcrowding of the out-patient department, which was situated immediately below one of the wards,

with constant outbreaks of diphtheria and other infectious diseases, necessitating frequent closing of the whole Infirmary, made rebuilding imperative.

The experts who reported on the sanitary condition of the Infirmary all laid great stress on the absolute necessity of separating the out-patient department from the building of the Infirmary proper. The new building was opened on January 10th, 1907.

1867. As in the case of so many of Liverpool's splendid hospitals, the Stanley Hospital owes its origin to the energy and initiative of one or two medical men—in this instance to David Dunlop Costine, M.D., and Edwin Mason Sheldon, M.R.C.S. It was established at 56 and 58, Stanley Road, in the year 1867, and designated, by special permission of the Right Honourable Edward Geoffrey, fourteenth Earl of Derby, K.G., etc., "The Liverpool Stanley Hospital."

In 1896 a stained glass window was added to the hospital, erected by the tenantry of the Knowsley estate to the memory of the fourteenth Earl of Derby, unveiled by the sixteenth Earl of Derby, Lord Mayor of Liverpool, March 20th, 1896.

1855. The first organisation for the Training of Nurses is stated to have been opened at 20, Soho Street, in 1855, its object being, by practical instruction, to qualify nurses to take charge of surgical and medical cases, and thus to supply for ordinary cases the same aid that is provided for obstetric practise by the School at the Lying-in-Hospital.

TRAINING SCHOOL AND HOME FOR NURSES, ASHTON
STREET.

1859. This building was erected by William Rathbone, in memory of his wife: "In grateful memory of her love, the work of nursing the poor in their own homes by trained nurses was instituted in 1859, and this Home was built and opened in 18⁶2."



WILLIAM RATHBONE, 1819-1902.

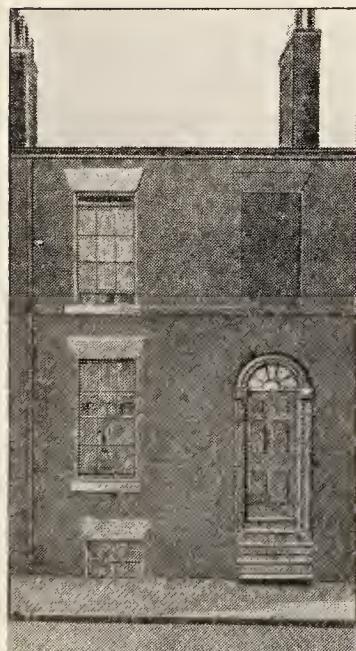
For a full account of the circumstances which led up to the founding of these Homes it is necessary to read the "History and Progress of District Nursing," by William Rathbone, and also "William Rathbone: a Memoir," by Eleanor A. Rathbone. All that can be ventured on now is to glance at the principal facts in connection with their establishment.

In 1859, Mrs. Rathbone died. To quote from one of the above-mentioned volumes:

"His wife had been attended during her last illness by a nurse, Mary Robinson. . . . Seeing how much difference trained nursing could make, even in a home where every comfort and appliance that affection could suggest was provided, William Rathbone began to think what illness must mean in the homes

" of the poor, where comforts, appliances, and skill were " alike wanting."

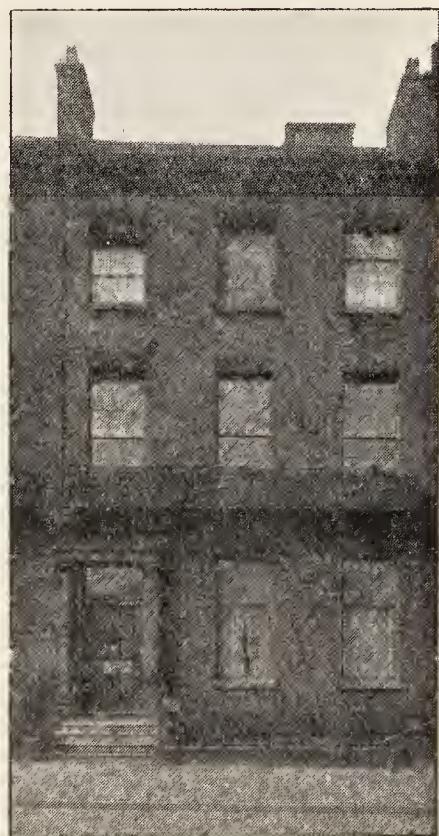
He engaged Nurse Robinson for three months to nurse poor patients in their own homes in a certain district of Liverpool, undertaking to supply necessary appliances, nourishment, and medical comforts. At the end of a month Nurse Robinson said she found herself unable to face the misery and suffering she was called upon to witness, and desired to be released from her engagement. She was, however, persuaded to go on, and



THE FIRST NURSING HOME,
38 ELDON PLACE.

grew to love her work so much that she said if Mr. Rathbone would agree to keep her on she would never do any other kind of nursing. Her success in affording relief reconciled her to the sadness of her calling. To quote again:—

" Lives had been saved which " would otherwise have been " lost ; patients considered " chronic had been restored " to health ; object lessons in



WEST HOME, 69 SHAW STREET,
GIFT OF SAMUEL GREG RATH-
BONE, 1883.

"the value of cleanliness, order, and fresh air had been given in many homes."



NORTH HOME, 126 KIRKDALE ROAD.
GIFT OF MRS. THOMPSON, OF THINGWALL,
1889.

for itself in its own hospital.

The principal Liverpool hospital, the Royal Infirmary, had then no facilities for training, and most of its nurses, like those of other hospitals of the day, were women of a rough type, often untrustworthy and intemperate, and, according to the lowest modern standard, inefficient. The Committee were con-

Mr. Rathbone then wished to extend his experiment and looked about for suitable nurses, but in vain. He applied to numerous institutions, but could not succeed in obtaining any. He then consulted Miss Florence Nightingale. She suggested that Liverpool had better form a school to train nurses



OVERTON STREET HOME, EDGE HILL.
GIFT OF MRS. GEORGE HOLT AND
MRS. AIKIN, 1890.

scious of the need for improvement in this respect, and had made an effort to attract a better class of women by empowering the matron to offer any that seemed worth it a salary of £16 instead of the usual £10. But the matron had found only four nurses whom she could trust not to celebrate such a rise in prosperity by getting drunk on quarter-day.



CENTRAL HOME, 1 PRINCES ROAD. GIFT OF B. W. LEVY, 1897.

The real difficulty in starting a training school was that the Infirmary had not sufficient accommodation for either nurses or probationers. Mr. Rathbone therefore undertook to build a training school and home for nurses, and to present it to the Infirmary, on condition that it was to be given a fair trial as a training school, and if this failed the building was to become the absolute



DERBY LANE HOME, GIFT OF
JOHN RANKIN, 1903.

the Royal Infirmary ; secondly, for poor patients in their own homes ; thirdly, for well-to-do private patients. The training was, of course, to be carried on in the wards of the Royal Infirmary.

In 1898 the District nursing work of the Liverpool Training School and Home for

property of the Infirmary, and might be turned to any purpose they pleased.

On July 1st, 1862, the nursing of the Infirmary was handed over to the committee of the new Liverpool Training School and Home for Nurses, and after a year's work in temporary premises they took possession of their Home in Ashton Street on May 1st, 1863.

Their work was to provide nurses for three distinct purposes in the following order of priority : first, for



WILLIAMSON HOME, 1 CHURCH RD., WALTON,
GIFT OF A. WILLIAMSON, 1909.

Nurses, was handed over to the Liverpool Queen Victoria District Nursing Association.



ASHTON STREET TRAINING HOME.

The inscription on the statue to William Rathbone erected in St. John's Gardens by public subscription, states that he "instituted the Training School for nurses, and brought trained nurses into the homes of the poor and suffering, first in Liverpool and later throughout the country."

THE ORIGIN OF THE UNIVERSITY.

In a pamphlet entitled "The first Page of the History of University College, told by one of the Honorary Secretaries," is to be found a record (so it is claimed) of the main details of the story of the foundation of University College, Liverpool.

The story opens with an account of an "address," prepared by a committee, issued to the Liverpool public on May 2nd, 1814, advocating the claims of Science and Art ; and running through in the following order the Royal Institution, Queen's College, the Medical School, the School of Science, and Cambridge Extension Lectures, culminates in University College.

If this is the first page of the history, there was a long

preface of about fifty years—as recorded in the achievements of individual medical men. But even if the origin of University College is to be traced only so far back as the Royal Institution, why not give the credit to its founder, Dr. Thomas Stewart Traill ? for in 1813 the plan of the Liverpool Royal Institution originated with and was drawn up, by him.



THOMAS STEWART TRAILL.

Correctly to appreciate the work of these medical men, it is necessary to have a conception of the condition of affairs existing in Liverpool at the period now under review. An "impartial historian" of the time writes :—

"The quondam village of Liverpool is now become "a capital corporate town and the second port in "Great Britain. . . The only pursuit of the inhabi- "tants is Commerce. . . Liverpool is the only town "in England of any preeminency that has not one "single erection or endowment for the advancement of "Science, the cultivation of the Arts, or promotion of "useful knowledge . . . the liberal Arts are a species "of merchandise in which few of the inhabitants are "desirous to deal unless for exportation."

During the preceding half-century more or less successful attempts had been made to encourage literature and art—always associated with, if not originated by, medical men. In 1768 the Royal Academy was established by charter. In the following year "appeared the first symptoms of a regular design by the combined efforts of individuals to establish a society for the protection and encouragement of the art of design in Liverpool." Amongst its promoters were Drs. Matthew Dobson, Matthew Turner, and Michael Renwick—eminent men of their day. Regular meetings were held in John Street. The society lasted one year only, but was revived in 1773. Courses of lectures were given by Mr. Everard on architecture, Dr. Turner on anatomy, Mr. Burdett on perspective and on the art of design, Dr. Renwick on chemistry. The society held its first exhibition—the first provincial exhibition held in the kingdom—in August, 1774. One of the objects is stated to be "that of assisting youth in their studies to the best of their power, without any expectation

of pecuniary advantage." The following year the Society dissolved. "The rich germ of taste and science seems to have been cast into the soil, by the zeal of the enlightened few, before it was prepared to receive it. Political events, war, and privateering so wholly engrossed attention, that every other object was cast into the shade."

Eight years later, 1783, several former friends of the arts reformed the society with the object of "the promotion of the arts and the cultivation of taste, and to provide an academy, easy of access, and at a moderate expense." An annual subscription of 1 guinea gave free access to weekly lectures during the winter session. Exhibitions took place in 1786 and 1787, but in 1794 the society was again dormant. In 1810 another attempt was made to revive it, and exhibitions were held every year for the next five years up to 1814, when the Royal Institution was established.

MEDICAL SOCIETIES.

The haze which envelopes the origin of all the early medical societies of Liverpool is as difficult to penetrate as that which surrounds the lives of the early medical men. The following is a list of the names of Liverpool Medical Societies found in Contemporary literature:—

Between 1770 and 1779 "The Liverpool Medical Society."

1779 "The Liverpool Medical Library."

1806 "The Medical and Physical Society."

1808 "The Medical Society of Liverpool."

1813 "The late Medical Society of this town."

1833 "The Liverpool Medical Society."

* * * *

(1837 *The Liverpool Medical Institution built*).

* * * *

1839 "The Liverpool Medical Association."

- 1840 "The Liverpool Medical Institution."
 1911 "The Medical Society of Liverpool."
 1911 "The Liverpool Medical Institution."

While nothing is known of the formation, purpose, laws, or meeting places of the Societies whose names are mentioned in 1806, 1808, and 1813, there is fortunately no doubt as to the name and origin of the first society established. The Athenæum possesses a volume entitled "A Catalogue of the Books in the Medical Library at the Infirmary, Liverpool, Printed by Wright and Cruikshank 1812." This is the earliest catalogue extant. The preface contains "The origin and constitution of the Liverpool Medical Library," and we read "The Liverpool Medical Society was originally set on foot by the physicians and surgeons of the Infirmary, who were soon afterwards joined by those of the Dispensary." We also know that the credit of the scheme belongs to the three surgeons Henry Park, John Lyon and Edward Alanson, and that it rose out of a desire "to purchase new medical publications jointly and to divide the books at the end of the year, so as to avoid the expense of each buying separately books which were not worth a second perusal."

Unfortunately there is no positive knowledge as to the date or even year of the foundation of this society. As the three surgeons above named were attached to the Infirmary in the year 1770, the origin may have been in that year. It cannot have originated earlier. It had however existed "for some years" prior to a meeting of "Gentlemen of the Faculty attending the Public Infirmary and Dispensary" held at the Union Coffee house, adjoining the site of the present University Club on October 7th, 1779, when it was thrown open to the profession generally under the name of the Liverpool



UNION COFFEE HOUSE.

Medical Library. To those who attach a value to priority of origin the uncertainty of date is unfortunate. Excluding those bodies granting degrees and qualifications the oldest medical organisation in England is the Medical Society of London, established in 1773. If the Liverpool Medical Society could be proved to have originated prior to 1773 it would take precedence of every Medical Society in the United Kingdom except that of the Edinburgh Medical Society.

Excluding then the Edinburgh Medical Society, founded 1737, only four Medical Societies were established prior to 1779, viz, those of London, Liverpool, Colchester, and the Middlesex Hospital Medical Society.

In 1833 another Medical Society was established. When the Medical Institution was opened the Liverpool Medical Library (the original Liverpool Medical Society

of 1770-1779) rented rooms in it, as did also for a time the Liverpool Medical Society, established in 1833.

THE LIVERPOOL MEDICAL INSTITUTION.

This building situated in Mount Pleasant was opened on May 31st, 1837, with an address delivered to the medical men of Liverpool by its virtual founder, Dr. Rutter, the President of the "Liverpool Medical Library" Society. In the course of his eloquent address he stated the uses for which the building had been erected. Briefly these were :—

1. The promotion of union in the profession.
2. The promotion of the general interests of the profession.
3. The discussion of all questions affecting the health of the town.
4. The dissemination of information affecting the welfare of the community.
5. The securing for medical men a fair and just remuneration for their services.
6. It was to be a place for study and mutual instruction.
7. It was to be a place for the meeting of Societies and the delivery of lectures on professional and philosophical subjects.
8. Last but not least, it was to accommodate the Medical Library.

The Liverpool Medical Society was established between sixty and seventy years before the Medical Institution was built.

The Institution contains a Library, with Theatre, Reading and Meeting Rooms. The Library contains about 12,000 volumes, including some early editions and valuable folios ; is open daily from 10 a.m. to 6 p.m., and is well supplied with English and Continental



MEDICAL INSTITUTION.

current medical Literature. The Theatre contains a fine oil painting of Dr. Rutter—a native of Liverpool, born 1762, died 1838—and has seating accommodation for some 250 to 300 persons. The Reading and other rooms utilised for the holding of meetings, clinical, pathological, and other demonstrations, are spacious and well arranged for the purpose. The walls are hung with an interesting collection of valuable engravings of famous medical men, while in one of the rooms is to be seen a select collection of etchings presented by Sir Francis Seymour Haden.

The year after the building was opened the Provincial Medical and Surgical Association, now the British Medical Association, held its seventh annual meeting in Liverpool, the meetings taking place in the Medical Institution. This was the first time the Association met in Liverpool.

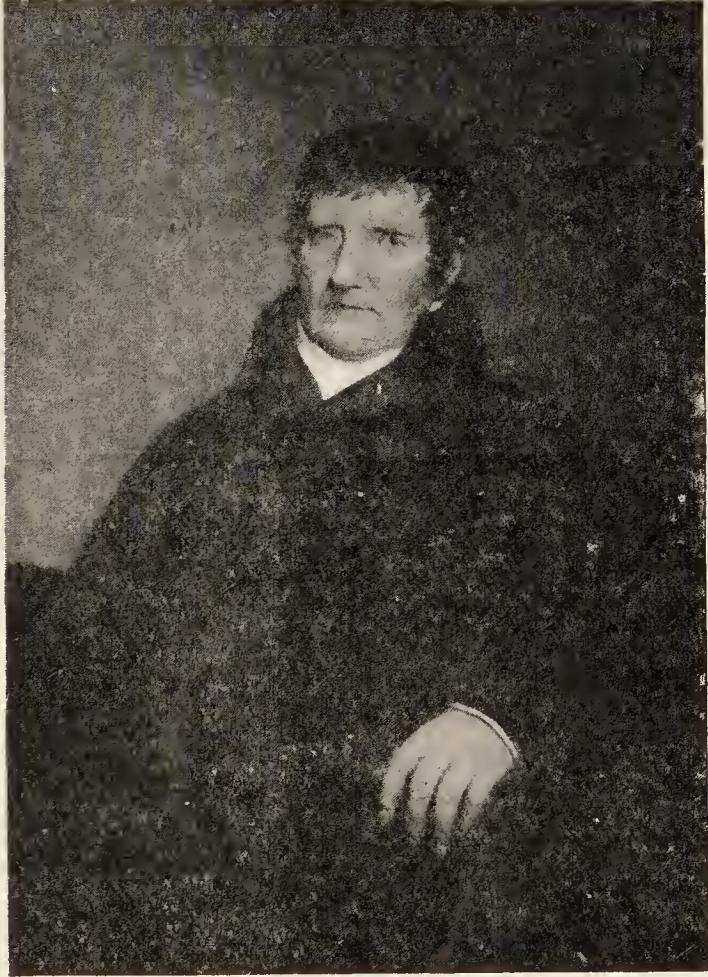
The Council of the Institution will welcome a visit from members of the Association wishful to see or make use of the building during their stay in Liverpool.

A Medical sketch of Liverpool would not be complete without allusion to Dr. John Rutter. Of the many eminent citizens, it would be difficult to find one who has left a more permanent mark on the city than he, but being of a retiring disposition others have received credit which properly belongs to him, the founding of the Athenæum being a case in point. Descended

from a Cheshire family which can be traced back to the reign of Charles II., and which appears to have suffered severely either by reason of the Civil war, or for 'faith's sake,' Dr. Rutter's grand-parents settled in Liverpool early in the 18th century.

Born in Liverpool in 1762, the son of one of Liverpool's free-men, educated in Edinburgh, where

DR. JOHN RUTTER.



he graduated in 1786, after spending an additional twelve months in London, he returned to his native city. He was in practice in 1788, residing at 9, Church Street, in 1790, at 43, Bold Street, in 1792, and at 27, St. Ann Street, then the fashionable quarter of the town, in 1800. A member of the Society of Friends and the nephew



THE THEATRE TAVERN.

of William Rathbone (1726-1789) he was one of that small band of enthusiastic pioneers, including William Roscoe, Drs. James Currie, John Bostock, and Thomas Stewart Traill, " who gave the right impetus and a right direction to that public spirit to which we owe those institutions of which Liverpool is with reason proud."

He became at the age of 27 the president of the Liverpool Library (The Lyceum), the first circulating library established in Europe. Seven years later he drew up a prospectus for the establishment of a news room, combined with a library, which he submitted to Mr. William Roscoe, Dr. James Currie, Mr. Joshua Lace, and Mr. William Clarke, together with plans for a building, supplied by his friend, Mr. Thomas Taylor.

The meeting took place on the 22nd November, 1797, at the Theatre Tavern, Williamson Square. The

Tavern adjoined the theatre. The scheme was accepted, the prospectus published, and the Athenæum established. Dr. Rutter became its first Treasurer 1798-1801, Vice-President 1802-1804, President 1804-1805, and for a second period also, 1816-1817. At the age of thirty, he was appointed an honorary physician—being one of six—to the Dispensary, and eventually attained the

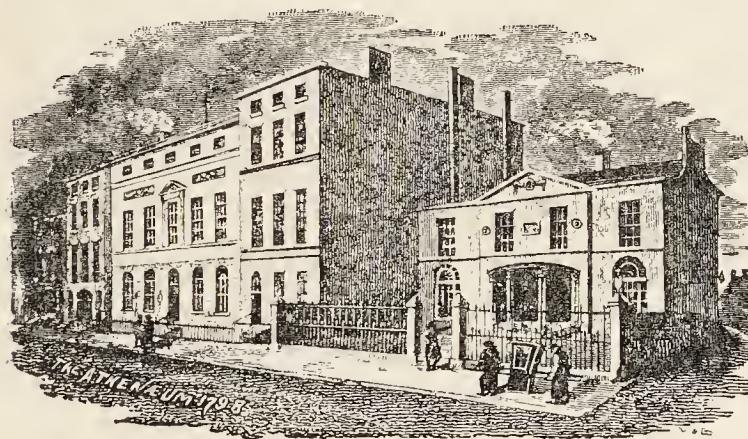
position of first physician in the town, which he held for many years.

In all progressive movements for the benefit of the town his name

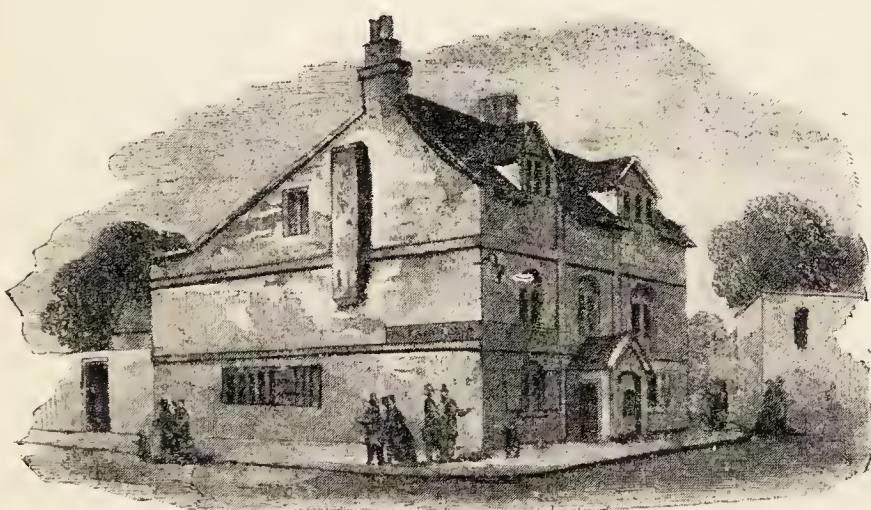
almost invariably appears either as benefactor or member of Council, and it was in recognising and advocating the means by which progress is alone possible, viz, education and co-operation, that Dr. Rutter pre-eminently shone. To him the medical profession owe the Medical Institution, a fine building erected on the site of the house in which William Roscoe

was born.

The immediate need for such a building was the existence of a very fine library of medical books, commenced at



THE OLD ATHENÆUM.



ROSCOE'S BIRTHPLACE, LIVERPOOL.

some date between the years 1770 and 1779, requiring a permanent home. Dr. Rutter also recognised the need of a Medical Hall to act in the medical world the part later played by St. George's Hall in the public world.

The Corporation warmly supported Dr. Rutter's ideas, giving the site at a pepper corn rent, and a donation of one thousand pounds. Dr. Rutter subscribed £694 : 0 : 0, which he subsequently increased ; the medical profession £692 : 19 : 0, and the public £575 9 : 10. Later a Bazaar which realized £1,050 was held in the Institution under the Patronage of the Marchioness of Salisbury, the Countess of Wilton, Lady Francis Sandon, Lady Francis Egerton, Lady Molineux, and Mrs. Ireland Blackburn. The Trustees acknowledged their indebtedness in the following communication to the Public Press :—

“The Trustees of the Medical Institution have great pleasure in stating that the recent ladies' bazaar has more than equalled their most sanguine expectations, having produced an amount which fully discharges the debt incurred by the erection of the building. They tender their grateful acknowledgments not only to the ladies who engaged in the undertaking and conducted it to so successful a result, but also to the public at large who generously afforded it their patronage and support.”

Dr. Rutter died the week after the bazaar and was buried at the Friends' Burial ground, Hunter Street. Later a tablet to his memory was placed, and is still to be seen, in St. Peter's Church.

He left a very valuable and unique collection of Minerals formed by William Phillips, Fellow Linnæan Society, to the Trustees of the Medical Institution, which was later presented by them to the city of Liverpool, and very gratefully accepted. The collection under

the name of the "Rutter-Phillips collection" is in the William Brown museum. It is celebrated for the value of its specimens, not only intrinsically, but on account of their being the actual specimens described and figured by Phillips in his "Introduction to Mineralogy" and in the "Geology of England and Wales," of which he was also author conjointly with the Rev. W. D. Conybeare. The collection is known to all Mineralogists and is one of the most prized possessions of the museum. It contains several thousand specimens, not a few of them believed to be unique, with drawings and measurements of many of the crystals, and forms one of the study series of collections. It will thus be seen that the liberality extended by the Corporation to the medical profession was not in vain.

CHAPTER III.

THE UNIVERSITY AND THE MEDICAL SCHOOL.*by Dr. O. T. Williams*

THE UNIVERSITY.

The University of Liverpool situated in Brownlow Hill is about ten minutes' walk from St. George's Hall. Incorporated in 1881 and federated with two other colleges in Manchester and Leeds respectively, University College was a constituent member of the Victoria University until the year 1903, when, through the persistent enterprise and public spirit of the pioneers of higher education in the City, a Royal Charter was granted and the University of Liverpool came into existence.

The Victoria building, designed by Waterhouse, includes a Great Hall, 68 feet by 30 feet; a Senate Chamber, 27 feet square; a large Theatre and Reading Room; and the handsome Jubilee Tower built by public subscription in commemoration of the year 1887, the fine chiming clock being given by Sir W. P. Hartley. The Library (containing upwards of 62,000 volumes), with its timbered roof and pleasant recesses for study, was the gift of Sir Henry Tate.

A statue of Christopher Bushell, executed by Bruce Joy, and a bust of the Earl of Derby, stands in the Entrance Hall. On one of the landings is a fine medallion in bold relief of George Holt, "Benefactor, Counsellor, Friend, Founder of the Chairs of Physiology (1891), Pathology (1894)." Other buildings of the University are the Chemical Laboratories; the Walker Engineering Laboratories, erected and equipped by the late Sir Andrew Barclay Walker; the Thompson-Yates Laboratories for the Departments of Physiology,

and Pathology; a School of Hygiene; a Botanical Laboratory, the gift of Sir W. P. Hartley; the George Holt Physics Laboratories; the Medical School; the Johnston Laboratories for the School of Bio-Chemistry, the School of Tropical Medicine, and Department of Veterinary Pathology, these Laboratories being the gift of Mr. William Johnston, shipowner, who also endowed the Chair of Bio-Chemistry and three Fellowships.

Extensive buildings have been opened in Brownlow Street for the Departments of Natural History and Electrical Engineering, and, through the generosity of Dr. E. K. Muspratt, a new block has been erected and equipped for the Department of Physical and Electro-Chemistry, adjoining the Chemical Laboratories.

Large extensions of the Engineering Buildings were opened in May of this year by Lord Haldane, and a Men's Students' Union Building has been erected on a site in Bedford Street, the Women's Union and Debating Hall being in the course of erection.

UNIVERSITY LIBRARY.

The nucleus of the present collection of books originated in a gift of about 1,000 volumes presented by the Rev. Canon Hume in 1882. Enriched by generous private donations the Library soon outgrew the space allotted to it, and ampler provision for expansion was made in the Tate Library of the new Victoria Buildings. This was built and furnished by Sir Henry Tate, and is decorated by busts of the donor, William Rathbone, the Rev. Charles Beard, Dr. G. H. Rendall, and Sir Oliver Lodge, and by the Shadford-Walker collection of engravings purchased and presented by Sir Henry Tate in 1889. The foundations of a good general library were laid down by purchases from a terminable

fund of £1,000 given by Mr. George Holt in 1887, and from a gift of £5,500 given for immediate expenditure by Sir Henry Tate in 1894. The libraries of Canon Hume, Professor Clark, the Rev. J. H. Thom (including the books of Blanco White), Dr. Nottingham and Thomas Glazebrook Ryeland, were acquired by bequests, and relations with local learned Societies were established by the transference to University College of the Libraries of the Liverpool Royal Institution in 1894, and the Liverpool Literary and Philosophical Society in 1899. The help of many other benefactors has enabled the University to found a scholars' library, fully and adequately equipped with the leading authorities and works of reference in the main departments of learning. Its books, now numbering upwards of 62,000 volumes, include a valuable collection of Academies and periodicals, and great series, such as Migne, Pertz, Muratori, *Acta Sanctorum*, etc., besides many rare specimens and early works. A recent and important development of the University Library has been effected by the creation of External Departmental Libraries, constituting branches of the general library, but housed in separate departmental buildings. Originating in collections formed by the activities of Professors engaged in specific fields of research and in some cases by important donations, these libraries, which aim at providing the most modern and advanced scientific literature in each subject, have now been brought under the control of the Central Library Administration, and recognised as part of the University Library. Under this arrangement books and journals dealing with particular branches of science are stored in the External Departmental Libraries, works of a general nature embracing several subjects being retained in the Tate Library.

UNIVERSITY LABORATORIES, MUSEUMS, ETC.

THE INSTITUTE OF ARCHAEOLOGY is at 38-42, Bedford Street, within a minute's walk of the University, and close to the New Students' Union. The Institute is open from 9.30 a.m. to 5.30 p.m., except on Saturdays, when it is closed at 1 p.m. Here is housed the loan collection of Egyptian Antiquities, for the most part discovered in Egypt by the University Expeditions of recent years. The collection occupies the ground floor rooms of 40 and 42, Bedford Street. The first three rooms contain collections representing the three main periods of ancient Egyptian History, including a series of ceramic types of the VI. dynasty, a complete series of Egyptian grain deposits from Beni Hasan, some important examples of red and black pottery of the Hykos period, and specimens of funeral stilac bearing Greek and Depotic inscriptions of the Ptolemaic Epoch from Esua and Abydos.

The collections illustrative of classical studies occupy the ground floor and first floor of 38, Bedford Street.

THE SCHOOL OF ARCHITECTURE, together with its department of Civic Design (Town Planning and Landscape Architecture) is housed in the old Queen Anne Buildings, which were, till recently, the Blue Coat Hospital of Liverpool. These form three sides of a quadrangle abutting on School Lane, behind the Pro-Cathedral in Church Street.

THE GEORGE HOLT PHYSICS LABORATORY is on the north side of the University quadrangle. It was opened by the late Lord Kelvin on November 12th, 1904. It covers an area of 9,600 square feet and has an average height of 55 feet. In the basement are a fully fitted workshop, a room containing liquid air plant, a room for

the custody and comparison of standards, and a number of special research rooms. On the ground floor are the doors of the large lecture theatre, laboratories, preparation room, etc. On the first floor are two large students' laboratories. The second floor consists almost entirely of research rooms of various sizes.

THE CHEMICAL LABORATORIES AND MUSEUM are accessible from Brownlow Street and the quadrangle. Besides the WILLIAM GOSSAGE LABORATORY and the Junior Laboratory, separate rooms are provided for organic work, gas analysis, photography, spectroscopic and microscopic work. In the basement there is a suite of rooms devoted to metallurgical teaching and research. The Museum is a representative collection, commenced in 1875, of specimens arranged mainly for educational purposes.

THE MUSPRATT LABORATORY OF PHYSICAL AND ELECTRO CHEMISTRY, which adjoins the main chemical building, was presented to the University by Dr. E. K. Muspratt in 1906. It was specially built and equipped for the study of physical and electrical chemistry. The electric installation forms a special feature. All classes of electrolytic and electrothermic work can be carried out. The laboratory possesses a large presentation collection, representing every type of electro-chemical commercial product.

ZOOLOGICAL LABORATORIES AND MUSEUM.—The Zoological Laboratories, situated in Brownlow Street, comprise Junior and Senior and more advanced Laboratories, and in addition a "Sea Fisheries" Laboratory and rooms for research on local marine biology, where the L.M.B.C. collections of the Museum can be consulted. Of especial interest in the Museum are the "Fisheries Collection," the "Local" collection, the collection of

Tunicata, and some of the series of fossil forms. In connection with the zoological department is

THE MARINE BIOLOGICAL LABORATORY AT PORT ERIN, ISLE OF MAN—It is open to advanced students for research work. The Council of the University has acquired the right to have one of the work-rooms at the Biological station reserved solely “for the use of Liverpool University Students and others nominated by the Professor of Natural History.”

THE HARTLEY BOTANICAL LABORATORIES and Museum, the gift of Sir William Hartley, are also situated in Brownlow Street. They consist of three principal floors with two mezzanines and a basement. The Museum is placed on the ground floor and the herbarium on the first mezzanine floor.

THE WALKER ENGINEERING LABORATORIES were built in 1887 by the late Sir Andrew Walker, Bart. In May of this year Lord Haldane opened the palatial addition, the Harrison Hughes Laboratories. These two buildings are joined together and are situate opposite the Medical School buildings. They contain, besides the usual appliances for instruction in the practical and experimental parts of the various branches of Engineering, a considerable amount of plant and apparatus for research work.

THE LABORATORIES OF APPLIED ELECTRICITY, situated in Brownlow Street, were opened in July 1905 by Sir Joseph Swan. They contain numerous Laboratories and Test rooms, and in addition there is an installation of wireless telegraphy presented by Sir William Hartley.

THE UNIVERSITY PRESS produces all the official publications of the University, and in addition subsidises literary and scientific journals in which the research work of many of its departments are published. These

journals also serve natural purposes in giving channels for the issue of scientific research in suitable form. Amongst the journals so issued there may be mentioned the following :—“Annals of Archæology” “Bio-Chemical Journal,” “The Town Planning Review,” and the “Engineering Journal.” Important text books by members of the University staff and others are also published by the Press, which is all the time extending its sphere of influence. The present Secretary is Professor Benjamin Moore, Professor of Bio-Chemistry.

THE MEDICAL SCHOOL.

Interesting as is the history of the growth of a Medical School, of as great interest to a Congress of Physicians and Surgeons is the question of its present position and equipment. The following pages will therefore be devoted to a short description of the work of the Faculty of Medicine of the University and of the educational facilities which are offered.

The Faculty of Medicine is responsible for the Under-graduate Curriculum in preparation for the degrees of Bachelor of Medicine and Bachelor of Surgery which the University confers, and also regulates the conduct of certain special schools which are in part autonomous—the Clinical School, the School of Dental Surgery, the School of Tropical Medicine, the School of Hygiene.

The Undergraduate's course of Medicine extends as elsewhere to five years. It is divided in Liverpool into three periods, the first or preliminary scientific period, the second, the period of anatomy and physiology, and the third, which is devoted to the more strictly professional studies.

In the first period during which Chemistry, Physics and Biology are studied the courses of instruction have undergone great changes during recent years with a view to adapting the instruction to the real needs of the medical student. In Biology, for example, the time of the student is no longer consumed in acquiring a knowledge of Zoology and Botany which have little bearing on his later studies. The principles of the subjects are taught as far as is possible, by taking as examples types which are directly connected with Medicine and Pathology. The same method is followed in Chemistry and in Physics, though unfortunately it cannot be so thoroughly carried out in these subjects. The average medical student still comes to the University without any preliminary training in Science. When this omission has been rectified, perhaps by making knowledge of the fundamental subjects compulsory in all preliminary examinations, the Medical Schools will be able to go much further in the direction indicated than is at present possible and the student will be led without a break from his Chemistry and Physics to his Physiology, and from his Biology to his Anatomical studies.

The Period of Anatomy and Physiology extends over four Academic Terms and during this time the attention of the student is wholly devoted to these two subjects. The Faculty of Medicine has convinced itself of the wisdom of this plan in preference to that of prolonging the study of the subjects concerned and intermixing them with others.

The Department of Anatomy is situated in the main Medical School Buildings. The staff consists of a Professor, three Demonstrators, a Lecturer in Surgical and applied Anatomy, and a Lecturer in Anthropology.

The Department of Physiology is housed in what is known as the Thompson-Yates Laboratory, opened in 1898. The Professor of Physiology has associated with him an Assistant Lecturer and Demonstrator and a Lecturer in Experimental Psychology. There is accommodation in this Department for Research Students and there are at present seven such students under the guidance of the Professor. The Laboratories to which the undergraduate students are admitted are those of Chemistry and Applied Physiology.

Under normal circumstances a student completes his Anatomical and Physiological studies at the end of the Autumn Term of his third year and he then commences Pathology, General Surgery, Practical Surgery and Materia Medica. He also goes to the Clinical School for Courses of instruction which prepare him for work as Dresser and Clerk.

The Department of Pathology occupies the ground floor of the Thompson-Yates Laboratories. It comprises a Museum, a Student's Laboratory of Morbid Anatomy, a Bacteriological Laboratory and private Research rooms. In addition to the main Pathological Museum there are two teaching collections in the Departments of Surgery and Obstetrics. Surgery is accommodated in the Medical School building where there is a Lecture-Theatre, a Class Room of Practical Surgery and a Laboratory of Surgical Pathology. The course of instruction of Systematic Surgery extends throughout the third period of the Curriculum. The student first attends Lectures in General Surgery and Classes in Practical Surgery. In the following winter there is a Lecture Demonstration Class on Regional Surgery and in the last year there are weekly demonstrations on Surgical Pathology and a course of practical instruction

in operative Surgery. The Class rooms of Materia Medica and Pharmacy are also placed in the Medical School buildings and here also are delivered the Lectures in Medicine, Therapeutics, Ophthalmology and Forensic Medicine, and other Lecture Demonstration Courses.

THE CLINICAL SCHOOL.

The Clinical School is in some respects unique. It is formed by the association of four General Hospitals and five Special Hospitals, viz :—The Royal Infirmary, The David Lewis Northern Hospital, The Royal Southern Hospital, The Stanley Hospital, The Infirmary for Children, The Hospital for Women, The Eye and Ear Infirmary, St. Paul's Eye Hospital, St. George's Hospital for Skin Diseases.

The teaching in these institutions is under the administration of the Board of Clinical Studies which carries out the Clinical Curriculum according to the University Ordinances and Regulations. The Hospitals contain a total of 1,050 beds ; 800 of these are in the general Hospitals, 250 in the special Hospitals. In this large number of beds the School possesses a field for Clinical instruction which is unexcelled in the United Kingdom ; the fact that the whole of the teaching in the Hospitals is under the management ensures the employment of these extensive facilities to the best advantage. The Clinical School is thus in a position to afford to students and practitioners of Medicine a Medical education as complete in all branches as can be obtained in any other Medical School.

A large measure of freedom is given to the student in regard to his Hospital work. He is not allowed to remain for the whole of his Clinical work at one Hospital but except for this he is able to choose the institution

at which he will attend. While he is holding appointments as Dresser and Clerk he can only transfer his attendance from one Hospital to another at the end of a Term, but during his Final Year he may attend demonstrations, Clinical Lectures, Ward visits, and Operations in any of the Hospitals in the School without restriction. This plan has been followed during the last six years and has been proved to possess great advantages and no drawbacks. The whole of the instruction in the Clinical School is regulated by The Board of Clinical Studies to which the various institutions send representatives.

THE SCHOOL OF TROPICAL MEDICINE.

The School was founded in 1898 for the purpose of promoting the study of Tropical Medicine by the investigation of Diseases in Tropical countries and of providing suitable training for medical officers and others proceeding to the tropics. The School received its Charter of Incorporation in 1905. The Laboratory training of the students of the School is given in the Johnston Laboratory, the Clinical teaching in the special tropical ward of the Royal Southern Hospital.

The declared objects of the School are :—

1. To give a practical training to Medical men proceeding to the Tropics in the special subject of tropical diseases, or to enable them to familiarise themselves while on leave in a practical manner with the results of the most recent research in all branches of tropical Medicine.
2. To conduct original researches into tropical diseases.
3. To organise prophylactic measures against tropical diseases.

The Tropical Laboratory occupies the ground floor of the Johnston Laboratory. It possesses all the necessary apparatus for the instruction and research, a museum of tropical pathology and a library. With this Laboratory is associated the research Laboratory at Runcorn. Here home work is carried out in connection with the various expeditions of the School and researches on tropical pathology and parasitology are conducted. The School has organised twenty-seven expeditions to various parts of the world and results of great importance have been derived from the work done by those sent out. These results have been published in a series of memoirs and in the School Journal entitled "Annals of Tropical Medicine and Parasitology."

The University awards a Diploma in Tropical Medicine after a course of instruction and examination ; the Diploma has been awarded to 172 candidates.

THE SCHOOL OF DENTAL SURGERY.

Complete courses of training in Dental Surgery are offered by the University which is for this purpose in affiliation with the Dental Hospital, Pembroke Place. The Liverpool Dental Hospital, founded in the year 1864, adjoins the University. Over twenty years ago a Dental School was established in connection with the Hospital. Owing to the increase in the number of patients, and to provide greater facilities for the Dental Officers and Students, the Charity and School has several times had to remove to more commodious premises, and is now housed in a new building within the area of the University.

The New Hospital covers a site of 600 square yards. On the ground floor are placed the Extraction and

Anæsthetic Departments, with general and special waiting and recovery rooms, and administrative offices. The first floor is occupied by the Prosthetic Department, Mechanical Laboratory (replete with every modern appliance), Lecture Hall (for the Dental Lectures), Teaching Museum and Library. The Filling room covers the whole of the top floor (100 feet by 46 feet) portions of which are specially reserved for orthodontia and the demonstrator. This room contains 45 pump operating chairs, each fitted with a special water-flushed spittoon. A room for students, with cloak room and lavatories, occupies the central floor. Special attention has been directed to lighting and sanitation. All the operating rooms are placed on the North side. Electric light and power has been installed throughout the building, the whole of which is heated by steam radiators.

As the building now stands it is the finest and most complete in the kingdom. The Mechanical Laboratory has accommodation for over 30 pupils and is placed in charge of a skilled mechanic under the supervision of the Prosthetic Dental Surgeon and the Warden. Over 33,500 patients were treated during last year, with a total of over 28,300 operations, including over 10,000 filling operations.

THE SCHOOL OF HYGIENE.

The University grants a Degree in Hygiene (M.H.) and a Diploma (D.P.H.) and every facility is afforded for training in Sanitary Science and State Medicine.

The City of Liverpool and its Port afford exceptional advantages for the study of Public Health. Under the Medical Officer of Health there are some 95 inspectors employed in the sanitary administrations of the city. In addition, the city fever Hospitals furnish ample

material for the study of zymotic disease in every phase. There are special bacteriological Laboratories devoted to the practical study of the diseases of men and animals in relation to Sanitary Science, and to the investigation of the purity of air, water, foods, etc. The Chemical Department of the University is equipped for training in water and food analysis.

The Curriculum for the Degree extends over a period of two years, the first of which is devoted to Laboratory instruction and practical classes (including those for the Diploma); the second being devoted to advanced study and research. The Curriculum for the Diploma examination demands (1) a six months' course of practical instruction in Sanitary Science, (2) a six months' course of Laboratory instruction in Chemistry and Bacteriology, and (3) practical instruction in Infectious Diseases.

* * * *

The Liverpool School has not shared in the diminution of students which has been general in Medical Schools during the last ten years. The average entry of new students is about 35 Medical Students and 25 Dental Students. The total number of undergraduate Students at present receiving instruction is 212. A feature of the work of the School is the large number of research Students in the Laboratories, during the session 1911-12 they numbered 41. For graduates there are a large number of posts open; twenty resident appointments are made every six months in the general Hospitals, fourteen of which are salaried, the salaries ranging from £60 to £100; in the special department and special Hospitals there are six additional resident appointments. In the departments of the Faculty appointments are made to Fellowships each session. Each is of the

annual value of £100 and the list is as follows: The Robert Gee Fellowship in Anatomy, the Alexander Fellowship in Pathology, the Johnson Colonial Fellowship, the J. W. Garrett International Fellowship, The Ethel Boyce Fellowship in Gynaecology, the Thomas Fellowship in Surgical Pathology, and the Holt Fellowship in Physiology and Pathology. There are also a number of Entrance and other scholarships.

The equipment of the School has been recently enriched by the institution of two new chairs. A chair of Entomology has been established in memory of John Everett Dutton a graduate of the University who died in Africa while on an expedition sent out to investigate Sleeping Sickness. The chair is associated with the School of Tropical Medicine. During the present session a new Chair of Bacteriology has been founded which will no doubt add strength to the University in affording adequate instruction and promoting research in this great subject.

LABORATORIES OF THE MEDICAL SCHOOL.

THE MEDICAL SCHOOL BUILDINGS.

These buildings contain numerous laboratories in which the work of the department is carried on. These include—in the basement—laboratories for Practical Surgery, Surgical Pathology and Ophthalmology, and in the mezzanine, the students' laboratory of Materia Medica and Toxicology, with the private laboratories of the Lecturers in these subjects. On the first floor are the anatomy theatre, preparation room, dissecting room, private laboratory, and the library of Anatomy, and on the second floor a Theatre for Operative Surgery, a lecture room, and a smaller dissecting room for women students.

THE THOMPSON-YATES LABORATORIES.

The Thompson-Yates Laboratories were provided by the late Rev. S. A. Thompson-Yates in 1898, and contain laboratories for Physiology, Histology, Pathology and Bacteriology.

PHYSIOLOGY AND HISTOLOGY.

The department of Physiology occupies the two upper floors of the Thompson-Yates Buildings. It comprises a large lecture room, and three large and several smaller class rooms. Of the large rooms, one is arranged for 'Physical Physiology,' one for 'Chemical Physiology,' and one for 'Histology.' The lecture room is equipped with lantern fittings for projection and demonstrative experiments. The Chemical and Physical class rooms are supplied with students' apparatus. The Histology class room gives ample accommodation and facilities for students' instruction in work with the microscope.

Work in the subject of Experimental Psychology is carried on in this laboratory.

PATHOLOGY AND BACTERIOLOGY.

The department of Pathology includes two laboratories for the study of (1) Morbid Anatomy, (2) Bacteriology. The Morbid Anatomy class room is on the ground floor, in direct communication with the Pathological Museum. It is fitted with fully-equipped places for seventy students, and the most recent appliances for Histological work. The Bacteriology class room is furnished for the purpose of study and investigation. The department, in addition, contains three large rooms for private investigations, fitted completely with apparatus, shafting and electric motors, along with special preparation room and workshop, a centrifuge chamber, incubator room and a photographic room.

THE JOHNSON LABORATORIES.

The Johnson Building, the gift of William Johnson, contains laboratories of Veterinary Pathology, Tropical Medicine, Experimental Medicine, and Bio-Chemistry, and is chiefly devoted to post-graduate teaching and research. The building contains four floors, each of which accommodates a separate department.

DEPARTMENT OF VETERINARY PATHOLOGY.—This department, occupying the basement, consists of a museum and laboratory in which instruction is given in the Pathology of disease in the domestic animals.

DEPARTMENT OF TROPICAL MEDICINE.—The ground floor and part of the first floor containing, in addition to a museum, a number of rooms for teaching and research work, are occupied by the School of Tropical Medicine.

DEPARTMENT OF EXPERIMENTAL MEDICINE.—The first floor is occupied partly by the School of Tropical Medicine, partly by the Liverpool Cancer Research organisation, and is open so far as there is room to any form of Biological research.

THE BIO-CHEMICAL DEPARTMENT.—This department, at the top of the building, is devoted to research upon Bio-Chemical problems. It accommodates about ten research students whose work is done under the direction of the Professor. In this department is also carried on the work on Pharmaeology. This year there was published the second volume of "Research in Bio-Chemistry" containing the records of the work of the numerous workers attached to the Laboratory.

MUSEUMS OF THE MEDICAL SCHOOL.

THE ANATOMICAL MUSEUM occupies two floors in the west wing of the Medical School, underneath the dis-

secting room. It consists of ground floor, gallery, and work-room, each entered from the main staircase. An internal staircase also connects the dissecting room and both floors of the Museum.

The ground floor, which measures 70 ft. by 40 ft., is occupied by skeletons and models, and on each side are bays separated by cases, containing specimens, models, and preparations, illustrative of the Anatomy of organs, Embryology, Teratology, Dental Anatomy, and Physical Anthropology.

The gallery is filled with cases containing dissections, frozen sections, preparations of the anatomy of the brain, ligaments, the ossification of the skeleton, and abnormalities in various systems.

The Museum is also fitted up as a Bone-Room, and is intended primarily for the use of students, who are encouraged to make use of it as a place for quiet study. The Museum has been recently enriched by the addition of preparations and models, and by an extensive series of pre-historic Eskimo skulls, presented by J. A. Brierley, B.A., a former student of the School.

THE PATHOLOGICAL MUSEUM contains a representative collection of more than 2,500 specimens illustrative of Medical and Surgical Pathology, consisting of typical examples for teaching purposes, and of many rare forms for reference and research. There is also a large collection of paintings, drawings, and models.

The Museum is now under the charge of a Curator, and three Sub-Curators, for the Medical, Surgical and Gynaecological Sections respectively.

A large number of specimens have been recently added, in which the colour has been permanently preserved by the Kaiserling Method.

The Museum also contains a series of paintings illustrating heart disease, numerous photographs of surgical interest, and X-Ray photographs. Owing to the removal of the gynaecological specimens to a separate museum, space is available for additions. A portion of the surgical specimens are placed in the Practical Surgery room. Bound copies of the catalogue, in the form of a Handbook of Pathological Anatomy, are placed in the Museum for the special use of students, together with three printed appendices. All specimens recently added are described in typewritten appendices.

THE MUSEUM OF OBSTETRICS AND GYNAECOLOGY, adjacent to the Lecture Theatre and the Laboratory of the Department, contains (*a*) its own sectional pathological specimens, water colour drawings and photographs, (*b*) the special anatomical preparations and the wax and plaster models arranged and catalogued for systematic study and (*c*) the obstetrical and gynaecological instruments and the manikins for Practical Obstetrics and Gynaecology accessible for use by the students at any hour during the sessions and vacations.

The Professor, the Sub-Curator, the Demonstrator and the Obstetric assistant attend daily.

A special museum visit is made by the Sub-Curator for the instruction of students in Obstetrical and Gynaecological Morbid Anatomy during one hour, weekly, throughout the academic year.

THE MUSEUM OF VETERINARY PATHOLOGY is situated in the Johnson Laboratories and illustrates in a very complete manner the diseases of the lower animals. In addition to a large number of specimens illustrating the more common medical and surgical affections of the domesticated animals, the museum contains a unique collection of animal parasites, numerous specimens

illustrating those diseases of the lower animals which are communicable to man, and also the lesions produced in animals by the micro-organisms of the infectious diseases of man.

THE MUSEUM OF MATERIA MEDICA, situated in the old building of the Medical School, is accessible during the usual hours to all students of the University. It is also open to any member or student-associate of the Pharmaceutical Society upon application to the Lecturer in Materia Medica and Pharmacy. Typical specimens of the organic drugs are arranged in the cases in the order of Greenish's work on *Materia Medica*. There is also a collection for the use of students. The herbarium of medicinal plants has been increased by a number of plants from the West Coast of Africa. A series of synthetic chemicals and a number of photographs illustrating the collection and commerce of drugs are among the more recent additions.

THE MUSEUM OF HYGIENE, situated in Ashton Street, contains many valuable meteorological instruments, models, and specimens, illustrating Public Health work. Among the exhibits are :—A full sized model of drainage of a house constructed according to the modern principles of sanitation ; a section of a street showing position of electric light cables, gas and meter mains, and construction of roadway and sewers ; full sized section of the Oswestry filter beds used for the purification of the Vyrnwy water supply to Liverpool ; ventilating appliances of all kinds ; models showing the old and new methods of construction of dwelling houses, and illustrating the Liverpool Building Bye-Laws as to open spaces, etc. ; a collection of comparative Pathology specimens, illustrating the diseases of animals used for human food ; a collection of various foods and drugs

commonly subject to adulteration, and showing the various processes of preparation for human consumption. Fully equipped Bacteriological Laboratories are provided, the larger one for the classes in Practical Bacteriology, the smaller for research students.

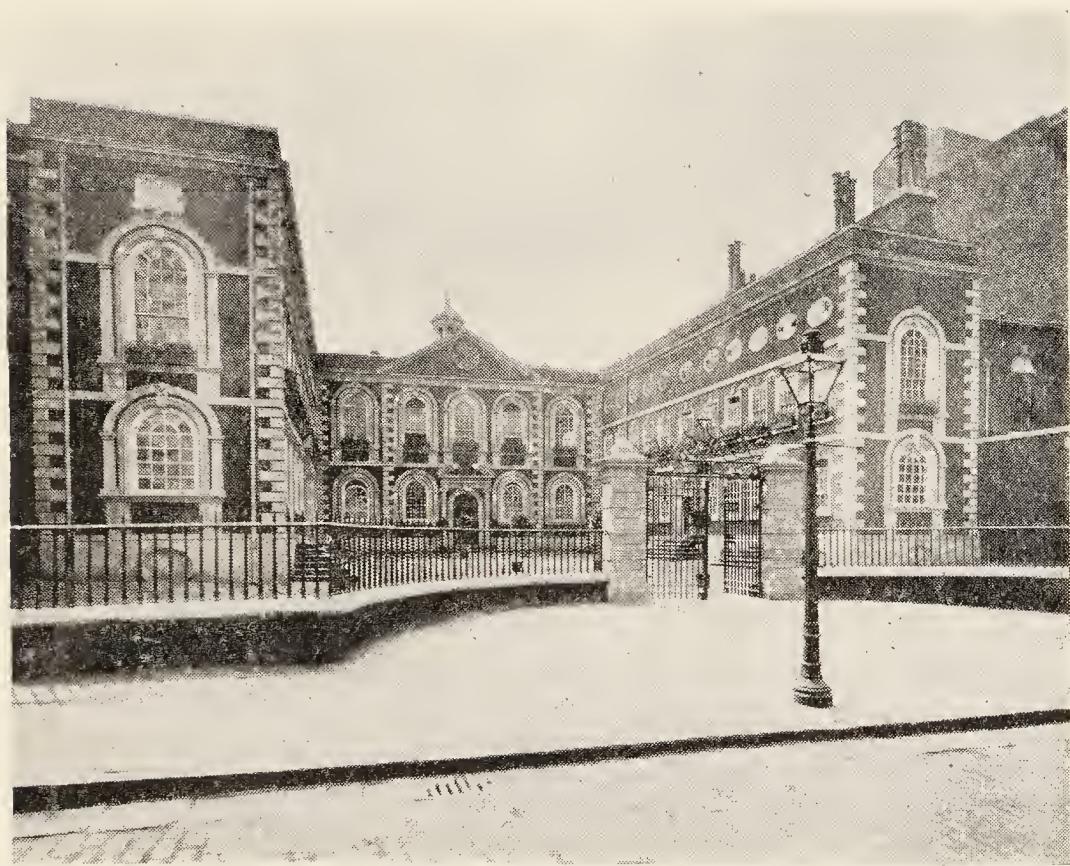
The Museum is open to the public daily from 9 a.m. to 5 p.m., and on Monday and Wednesday evenings from 7 to 9 p.m.

A large library has been formed of Health Reports of various cities and towns throughout the world, and it includes also a collection of scientific papers relating to public health subjects.

THE SCHOOL OF ARCHITECTURE.

By PROFESSOR C. H. REILLY.

This building, situate in School Lane, Church Street, was erected, according to a date still preserved on the main facade, in the year 1717, and was till quite recently the Blue Coat Hospital of Liverpool. As such it was for a couple of centuries the home of Liverpool's oldest Charity, and to-day it remains not only the one specimen of Queen Anne Architecture in the town but from many points of view the most beautiful and venerated of its buildings. Constructed round three sides of a courtyard, open on the fourth to the garden of the Pro-Cathedral, it preserves the true collegiate arrangement of the dining hall with its doorway immediately opposite the entrance gates and on either side a range of doors, like the staircase entrances in a Cambridge court. A feature of these entrances, not to be found however in any Cambridge College, is the pedestal of steps on which each doorway stands. These, with the flagged walks



LIBERTY BUILDINGS—THE OLD BLUE COAT HOSPITAL.

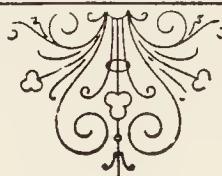
leading to them, at once express the structure of the building and give to the Courtyard a character of its own. The surrounding walls of a rich brown brick, beautifully mellowed with age, are articulated with the familiar bands and cornices of early 18th century architecture except on the side facing the entrance, where a slightly more ornate system of architraves, archivotts and pilasters adds dignity and importance. The main door of this front is a fine composition which must have pleased its craftsman-designer for we find it exactly copied in the south door of the Church opposite. A pleasing feature of the other wing of the building is the row of elliptical windows like the circular ones at Hampton Court, immediately under the cornice. As in all Queen Anne and early Georgian buildings, the windows are relied on very largely for the total effect.

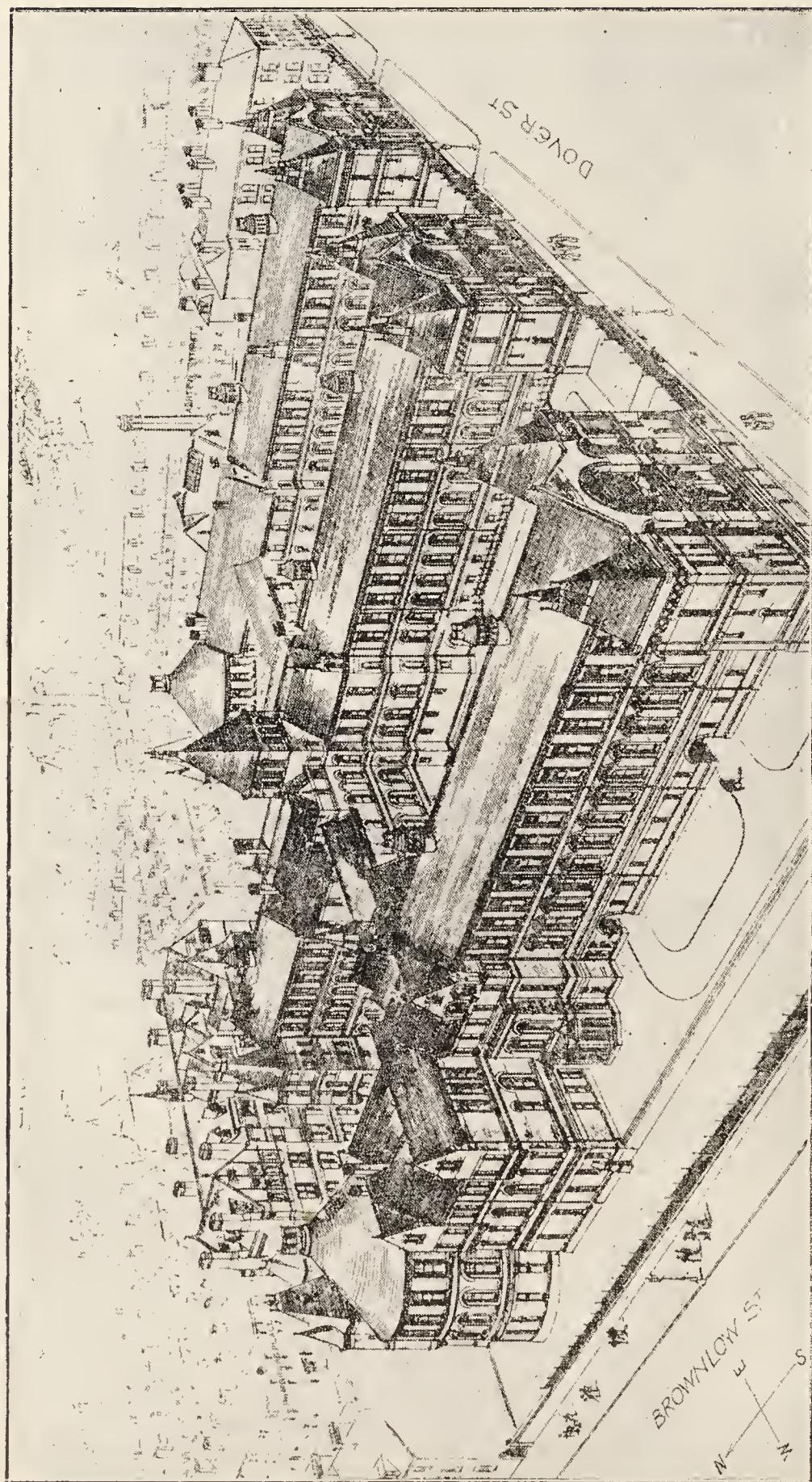
The glass is brought well into the wall surface, which the network of stout bars further maintains. One has only to glance from these windows, filled with crown glass reflecting each passing cloud, to the recessed plate glass windows of the modern buildings close by to see how in comparison to these old ones the modern windows become dark and meaningless voids. The old ones, too, in spite of their bars and varied glass, are the more practical. With the wall surface so preserved, the architect could give in fact a larger area of glass, with the result that no modern block of offices is so well and at the same time so comfortably lit as are the studios of the School of Architecture.

Through the generosity of Sir William Lever, the building was saved to the town at the time when the Trustees of the Charity were compelled to put it up to auction as a building site. He arranged first to rent it for the School of Architecture, and afterwards gave to the University the sum of £25,000 to buy it, should it be found to suit the purpose of the School, with the simple but vital restriction that the three facades to the courtyard were to be for ever unaltered. In this way the old buildings began a new lease of life. The chapel and dining room became the main studio and exhibition room of the School, while the Lecture rooms and smaller studios for advanced work range from it along either wing, one for architecture and the other for town planning. The old dormitories and other rooms not needed by the School of Architecture are, according to the scheme of Sir William Lever's gift, devoted to the purposes of art as studios for painters and sculptors. Rooms have also been found for an artists' club—the Sandon Studios Club—so that in the atmosphere of this old building, so stimulating by its own beauty and by

the striking contrast it affords to its surroundings, a habitation has been provided where it may be hoped, grouped about architecture, their rightful mother, the plastic arts in Liverpool may long continue to flourish.

C. H. REILLY.





ROYAL INFIRMARY, 1890.

CHAPTER V. *L.T. & Bickeloi*
LIVERPOOL HOSPITALS IN 1912.

In Chapter III the history of each of the hospitals has been given. In this chapter is a brief account of the present hospitals, which in almost every instance have now been rebuilt and brought into line with modern requirements.

THE ROYAL INFIRMARY.

The present building already mentioned in the Medical Sketch of Liverpool is situate in Pembroke Place, adjoining the University. It contains 300 beds



ROYAL INFIRMARY—OUTPATIENTS' DEPARTMENT.

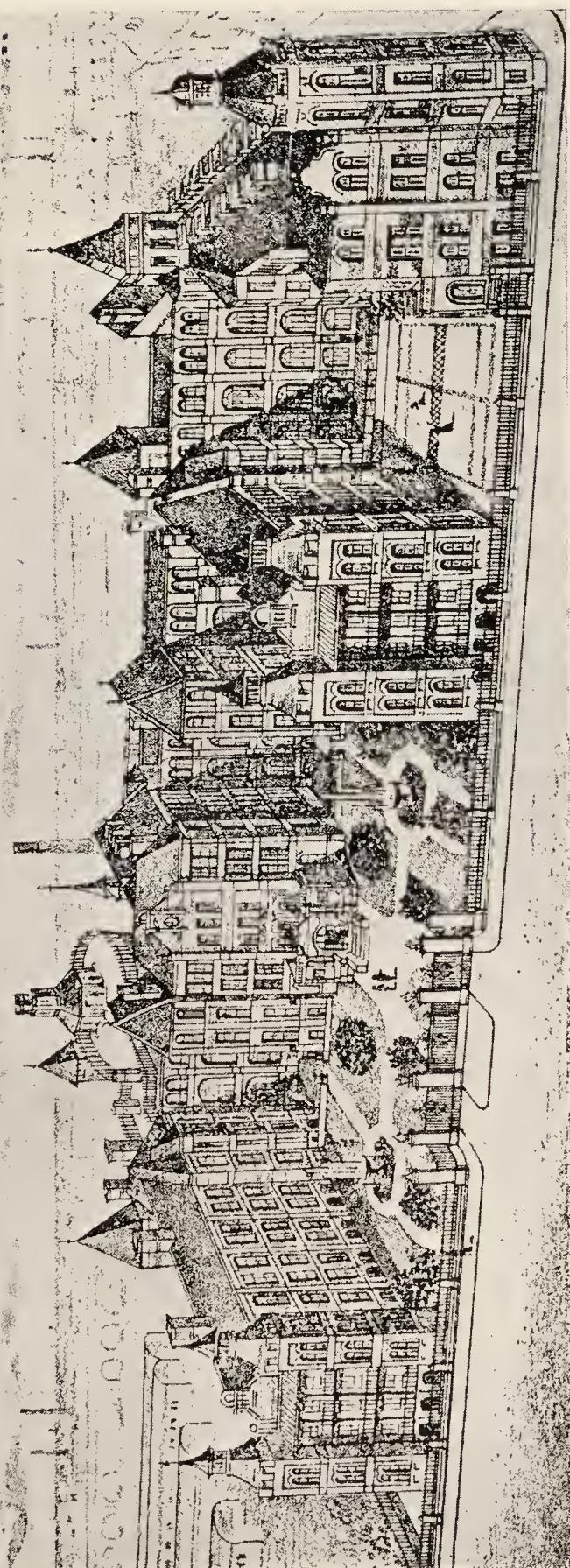
in eight pavilions and four circular wards, connected by wide corridors. Wards and corridors are alike lined with glazed bricks. There are four operation and two

lecture theatres, a beautiful chapel, a steam laundry, and every accessory for convenient working of the Institution. The building is generally recognised as an example of what is desirable in hospital construction. The out-patient department has been placed at the north-west corner of the site of the Hospital. The central hall, a spacious apartment accommodating 200 persons, is enclosed by the numerous large and well-lit departments for medicine, surgery, eyes, throat, skin and lock cases. A new radiographic department has recently been opened.

THE DAVID LEWIS NORTHERN HOSPITAL.

This Hospital was built by the David Lewis Trust to replace the old Northern Hospital (founded 1834), and was formally opened on March 13th, 1902, by Her Royal Highness Princess Louise, Duchess of Argyll. It occupies a site containing about 12,000 square yards, and has entrances from Great Howard Street and Leeds Street. The wards, in which there are about two hundred beds, are contained in three pavilions, each three stories in height, one circular and two rectangular.

The operating theatre occupies the first floor of a block of buildings in the rear of the main corridor, with direct communication with the same, and is provided with abundance of light from the sides, in addition to a large top light. Ventilation is secured by means of an electric fan, which draws the air through jute screens where it is filtered and washed, and is afterwards warmed by passing over steam radiators. Under the operating theatre is the room devoted to the treatment of lupus by the Finsen light, and communicating with it is a dark room in which photographs are taken by the Rontgen ray apparatus. Beneath this room is situated the Turkish Bath. The administration block is placed



NORTHERN HOSPITAL.

in a central position, while the kitchen is on the top floor, and is connected with the store rooms and main corridors by means of hydraulic lifts.

The out-patients' department is apart from, though connected with, the rest of the hospital. A special feature in the planning of this department is that the patients are enabled, after being examined in the consulting rooms, to proceed directly to the dispensary, procure their medicine, and leave the building without again passing through the waiting room. The situation of the hospital in the centre of docks and warehouses, entails great demands upon its accommodation.

ROYAL SOUTHERN HOSPITAL.

The original building—the Southern and Toxteth Hospital (1841)—was enlarged in 1849, but in 1865 it was considered desirable to erect an entirely new building. The site selected was at the corner of Hill Street and Caryl Street, a total area of 8,140 superficial yards being secured. The foundation stone was laid by the Earl of Derby in 1867, during the Presidency of George Henry Horsfall, and the building was completed in 1872, free of debt, and contained 202 beds. The opening ceremony, on May 21st, 1872, was performed by H.R.H. Prince Arthur, Duke of Connaught, who by permission of Her late Majesty Queen Victoria, gave it the name of "Royal," so that henceforth it should be known as "The Royal Southern Hospital."

A bazaar and fancy fair held in Sefton Park during the week beginning Monday, 20th May, 1872, realised, after paying all expenses, the handsome sum of £20,152 : 13 : 1, in aid of this charity. In the year 1893 Mr. Edward P. Thompson gave £2,000 in memory of his late father, Samuel Henry Thompson, of Thingwall Hall.



SOUTHERN HOSPITAL.

£1,000 of this was invested, and the other £1,000 was used in fitting up the Samuel Henry Thompson Ward.

In 1899 this Ward and Laboratory attached were set apart for the treatment of patients suffering from Tropical Diseases, and have since been used for that purpose in connection with the Liverpool School of Tropical Medicine. The total number of cases for the twelve years ending 1910 amounted to 1,636. The ships of the port are the sole feeders of the ward.

Since the erection of the present Hospital in 1872, up to the end of 1910, the number of In-patients was about 86,500, while those treated as Out-patients reached about 347,000 to which might be added re-dressings; so that the Royal Southern Hospital still maintains the position given to it in 1890, when, after having inspected the buildings and gone into the accounts—as had been done in other Charities in the United Kingdom—the Editor of Tit-Bits awarded £100 to the Royal Southern Hospital as being one of the 15 most economically managed institutions in the United Kingdom: and the Committee, while maintaining its efficiency, still endeavour to keep up its reputation.

LIVERPOOL INFIRMARY FOR CHILDREN.

The present building was opened on January 10th, 1907, by H.R.H. the Duchess of Albany.

A special feature is the new out-patients' department. This stands apart from the main building. The Patients' Entrance is at the South West angle of the building, approached from Mulberry Street and exactly opposite the Infirmary. It opens into a space for the accommodation of perambulators and through this communicates directly with a large Waiting Hall. The latter is placed in the centre of the building, and round it are grouped the various Consulting, Examining, and Operat-

ing Rooms. Near the entrance is a Registration Room, adjoining which an Isolation Room is provided from which infectious cases can be removed without their re-entering the main building. The dispensary is suitably placed opposite the principal entrance. At



CHILDREN'S INFIRMARY.

the North end of the building, next to Mulberry Place is the entrance for the Staff, near which the various rooms for Doctors and Nurses are situated, with Lavatories and other conveniences. An Ophthalmic Room is provided, also a Store for Splints, etc.

The building generally is one storey high ; the Waiting Hall being higher than the adjoining rooms, and is thus lighted and ventilated on four sides. The rooms are warmed by hot water, the fresh air passing through the radiators. Provision is also made for admitting fresh air by means of Leather's Ventilators. All windows have opening casements. The building is of Accrington red bricks, with Darley Dale stone dressings, the roofs being slated. There is accommodation for one hundred cots in five wards, three for medical and two for surgical cases. The hospital proper, the out-patient department, the laundry, and the Nurses' home are all separate and detached buildings.

HOSPITAL FOR WOMEN, SHAW STREET.

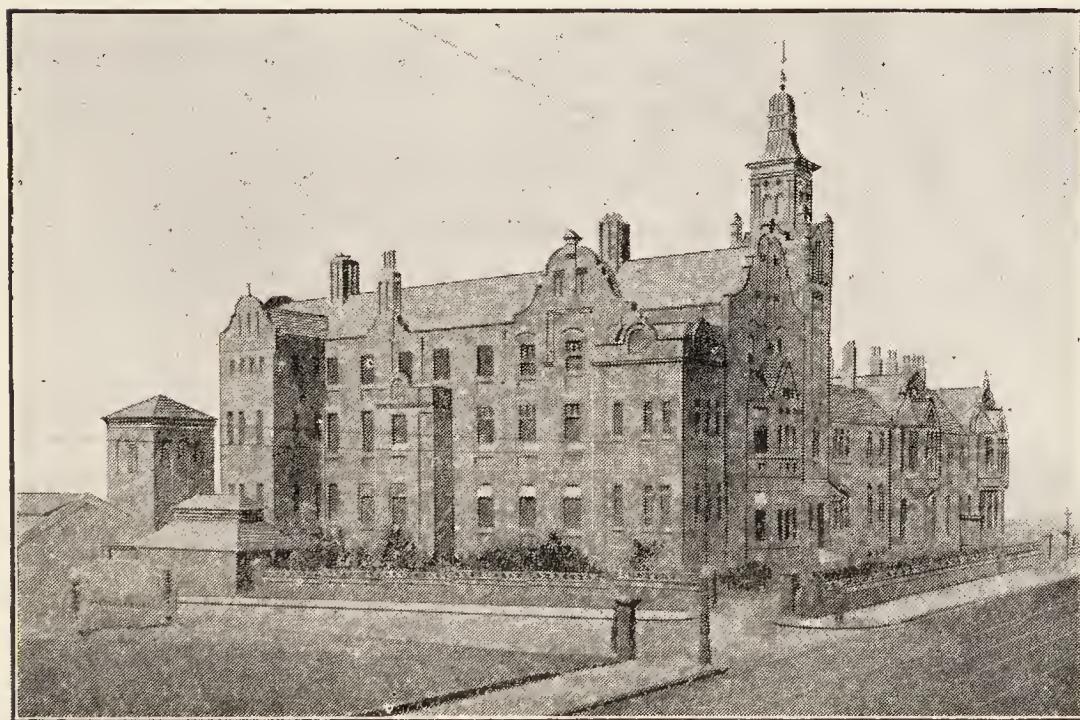
This Hospital was opened in 1883, and is exclusively devoted to the treatment of diseases peculiar to women. The Charity has grown out of one of the oldest in Liverpool, namely, the Liverpool Ladies' Charity, founded in 1796. The buildings of the Hospital cost £9,600. The Hospital serves a large radius outside the Liverpool District, including North Wales, the north of England, and the Colonies. The hospital is affiliated with the Victoria University, and the London Conjoint Board of Physicians and Surgeons recognise the clinical instruction here given to medical students.

Probationer-nurses are trained in the Hospital and a private nursing staff of fully trained nurses is much appreciated by the public. Subscribers' recommendation forms are not required. The admission of in-patients and the attendance on out-patients is regulated by their sufferings and necessities.

The Hospital is supported by voluntary contributions.

BOOTLE BOROUGH HOSPITAL.

This Hospital was established in 1846, but was practically a cottage hospital up to the year 1872. The foundation stone of the new building was laid by the Earl and Countess of Derby on the 24th of August, 1870. It was erected by public subscription on land given by the Right Hon. the Earl of Derby, and was opened on April 10th, 1872, the Earl and Countess of Derby again presiding.



BOOTLE BOROUGH HOSPITAL.

When the Bootle Docks were opened in 1887 the population of the district was more than doubled—increasing from 20,000 to 40,000 or 45,000—and further hospital accommodation became an imperative necessity. Another wing was added to the hospital at a cost of £12,000. Lord Derby generously subscribed £1,000 towards the funds of the hospital. Through the good offices of the late Edward Whitley, the sum of £500 from

the Roger Lyon Jones legacy was apportioned to the fund also.

The Committee of the Bootle Borough Hospital is desirous of adding a new wing to the building as a memorial to our late King Edward VII, deeming this the most desirable means of perpetuating his memory.

During the year 1911 a record number of patients received treatment at the Hospital, and as far as the finances of the institution were concerned it was a record year in that respect also, for—in spite of the increased cost of provisions and supplies generally—the receipts were over £200 in advance of any previous year's income.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.

This was established in 1863 at a small house in Crown Street. Larger premises were later taken in Soho Street. After a few years these in turn were found insufficient, and the site now occupied in Mount Pleasant was secured, and much good work has been done, notwithstanding the fact that the premises were quite unsuitable for the efficient carrying out of the treatment of the great scourge of consumption. The Honorary Medical Staff did their best under the existing conditions, but they recognised the great benefit that "would arise from the transfer of some of the patients to a Sanatorium outside of Liverpool, and easily approached by rail."

In 1899 a joint offer of £7,500 each was made by Lady Willox and Mr. (now Sir) W. P. Hartley, J.P. towards building a sanatorium in connection with the Liverpool Hospital for Consumption. This munificent offer was most gladly availed of, and now there stands erected the first public Sanatorium in connection with a philanthropic institution in England. Thus

Liverpool has led the way in this as in numerous other enterprises. The Sanatorium is beautifully situated on "Rough Hill," in the parish of Kingswood, Delamere Forest, and commands delightful views. The Civic Authorities naturally expect this Hospital to assist them in their efforts to control consumption. The occupants of the consumption wards maintained by the City at Fazakerley are for the most part examined at this Hospital prior to admission. The local Education Authorities also send to this Hospital, for examination, children who appear to be suffering from early phthisis.

THE STANLEY HOSPITAL.

When this Hospital was first opened in 1867 it was for the treatment of general medical and surgical cases, but in the following years special departments have been added. The Ophthalmic Department dates from 1881; a Dental Department was added in 1890, that for the Throat etc. in the following year. For eight years there was a Skin Department in connection with the Hospital, but this was practically discontinued in 1907, in which year a Gynæcological Department was introduced.

The total number of attendances during the first year was 10,618, and the last Annual Report gives a total of 65,773 attendances in all departments.

From time to time new wings have been added, and the hospital today is a monument to the generosity of the Earls of Derby, who have always taken a keen interest in its welfare.

THE LIVERPOOL DENTAL HOSPITAL.

This Hospital, as a charity, was founded in 1860, and the Dental School in connection with it was established in 1876. In the early seventies the opportunity occurred of purchasing a building in Mount Pleasant,

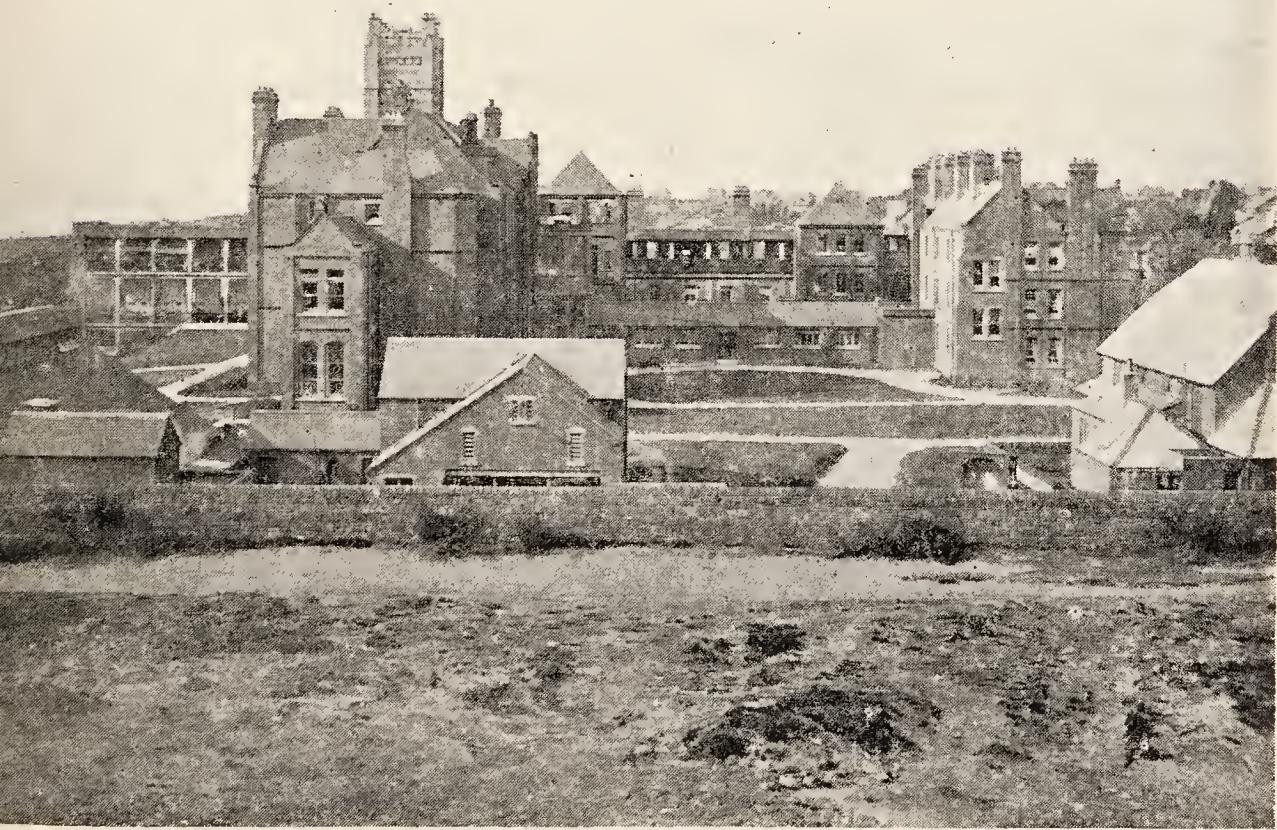
which served the purposes of the Hospital for many years. In the year 1897 the School was affiliated to the Faculty of Medicine of University College. The Board of Dental Studies was established in 1905. During last year over 32,500 patients were treated, giving a total of 28,624 operations, including 12,200 filling operations.

The new Dental Hospital, Pembroke Place (opened by the Earl of Derby, March, 1910), adjoining the University, and Royal Infirmary, covers a site of 672 square yards, and is acknowledged to be one of the finest in the Kingdom. The ground floor contains a large Waiting Hall, Examination Room, Extraction and Anæsthetic Rooms, with special waiting and recovery rooms for each, staff room, and special room for nurses. The equipment in each department whilst containing all modern accessories includes many new and specially designed appliances. The whole of the building is heated by hot water pipes and radiators, and lighted throughout by electricity. All urgent cases and extractions of teeth are undertaken free; other operations by letter of recommendation from a subscriber.

THE ROYAL LIVERPOOL COUNTRY HOSPITAL FOR CHILDREN, HESWALL.

This hospital, the pioneer of its kind in this country, was founded in the year 1899 to provide treatment for children suffering from diseases which lead to permanent ill-health and crippling or which being chronic are capable of being permanently benefitted by prolonged and uninterrupted treatment. The fine buildings which stand in ten acres of land on the slopes of the Dee at Heswall were opened in 1909, the work having been previously carried on with temporary arrangements.

The wards are constructed entirely on open air principals. Eighty beds are occupied, but two new wards have recently been completed to permit of the treatment of a total of 150 children. The inmates are detained for prolonged periods until either restored to health or permanently improved. The hospital consists of an



ROYAL LIVERPOOL COUNTRY HOSPITAL FOR CHILDREN, HESWALL.

administrative block which accommodates the resident and nursing staff. This is connected by means of a corridor with the central block, containing operating theatre, x-ray room, small wards for infants, separate rooms for special cases and sick nurses, dispensary, clinical laboratory, nurses' dining rooms, sewing room, and

a large recreation room. The kitchens and quarters for the domestic staff are placed on the top floor of this block. Access to the open air wards is gained from the ends of the long central corridors. There is a self contained isolation block. An electric plant supplies light and power.

OTHER HOSPITALS.

There are also the Hospital for Cancer and Skin Diseases, in Myrtle Street ; established in 1862. The St. George's Hospital for Diseases of the Skin, Grenville Street South ; founded 1863. Also the Samaritan Free Hospital for Women, 36, Upper Parliament Street ; established in 1896.

On the Cheshire side of the Mersey there are the Birkenhead Borough Hospital, established in 1828, 71 beds and 3 cots. The Birkenhead and Wirral Children's Hospital, established 1869. The Birkenhead Infectious Diseases Hospital, Tollemache Road, established 1876, 102 beds.

LIVERPOOL QUEEN VICTORIA DISTRICT NURSING ASSOCIATION.

In 1862 a Training School and Home for Nurses was formed, due to the exertions of Mr. William Rathbone, in connection with the Royal Infirmary, for the purpose of supplying trained nurses who should be available for the staff of the Infirmary, for district nursing-i.e., nursing the sick poor in their own homes, and private nursing. From 1862 to 1897 the district nursing work was carried on under the direction of the Training School. In 1897, however, it was decided that the proceeds of the fund, collected in the City for the commemoration of Queen Victoria's long reign, should be devoted to the maintenance and extension of the work, and a very

generous offer was made by the David Lewis Trust to build a new Central Home, at a total cost not exceeding £10,000.

Under these circumstances it was felt that the time had come when a change should be made in the governing body, and that there should be included in it representatives of the Training School and Home for Nurses, the Royal Infirmary, the Northern and Southern Hospitals, the Lady Superintendents, the subscribers to the Jubilee Commemoration Fund, the David Lewis Trust, and the Hospital Saturday and Sunday Fund Committees. The Liverpool Queen Victoria District Nursing Association was accordingly formed and on the 8th February, 1898, was duly registered.

The work has grown and increased with the growth of the City, the whole of which is divided into districts, and a nurse appointed for each.

The Nurses reside in four homes, each presided over by a fully trained and experienced matron. The matrons inspect the work of the nurses in turn, and once a year or oftener the Inspector appointed by the Queen's Jubilee Institute (to which the Liverpool Association is affiliated) inspects the nurses being trained in the Homes.

The nurses start out in the morning at 9.30 returning to the home for dinner at 1 o'clock. They are then off duty until 4.30, when they have tea, and start for their evening rounds at 5 o'clock. Each nurse visits from 12 to 20 patients per day. The cases are chiefly sent in by the medical men, but any one may apply at the homes for a nurse; and a post card stating the name and address, sent to the home, is enough to ensure the

attendance of a nurse as soon as possible. The nurses never take up a case where there is no medical man in attendance.

Although the work of the nurses in the first instance is to nurse the patient back to health, it does not end there, for the ideal set before them by the Founder of District Nursing Work is that the whole family should be the better for the nurse's visits, and laws of cleanliness and sanitation enforced, while the surroundings both of body and mind are made better.

The cases vary from acute cases requiring constant care to chronic cases requiring only a visit every second day.

LIVERPOOL EYE AND EAR INFIRMARY.

This fine building is situated in Myrtle Street on a corner site. The principal frontage is bisected throughout the whole length by a corridor with a staircase at each end.

In the basement are the kitchen, offices, and store-rooms, with furnace for the heating apparatus. There are two covered airing courts, and a space for a laundry.

On the ground floor the front part is devoted to residences for officers, the main entrance, with porter's room and small waiting room, and the board-room.

The left wing on the ground floor contains the out-patient waiting-room, consultation-room, dark room and dispensary.

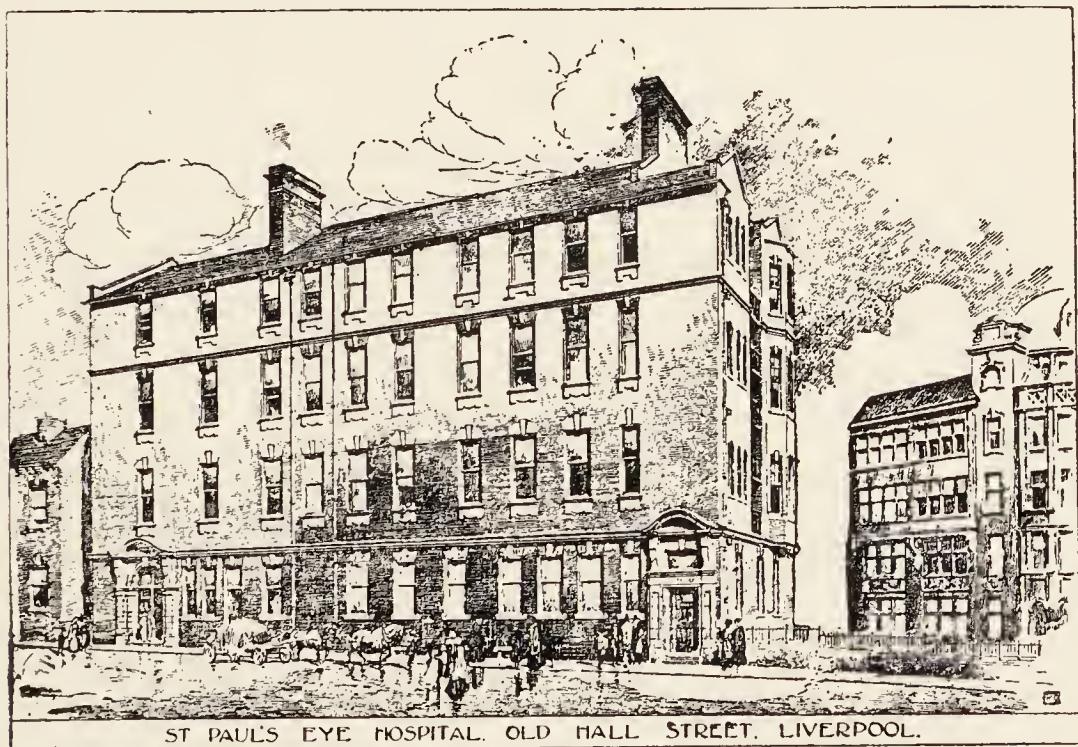
On the first floor one wing is arranged to hold fourteen beds, with lavatories, bath-rooms, and nurses' kitchens, for female patients; the corresponding wing holds sixteen beds for males. On the second floor the wards are arranged in a similar manner.

According to the latest Annual Report, 9,219 new eye cases and 3,273 new ear cases were seen and prescribed for 32,401 times. There were 1,543 in-patients during the year 1911, as against 1,213 in 1910, and the number of important operations performed was 1,550 as against 1,184 in the previous year.

It was in this Charity that operations, under chloroform, were first performed in Liverpool.

ST. PAUL'S EYE HOSPITAL.

The St. Paul's Hospital was founded in 1871 by the late George Edward Walker, F.R.C.S., who took two rooms in No. 6, St. Paul's Square, then a lodging house, for the treatment of the poor suffering from diseases of the Eye and Ear. In 1875 the whole house was taken,



a committee appointed, and the Hospital was made a public Charity, with accommodation of about 20 beds, afterwards increased to 25. In 1893, after a fire at the Hospital, an annexe was built, and the accommodation increased to 40 beds.

In 1906, No. 5, St. Paul's Square, was rented as a Nurses' Home, and the accommodation in the Hospital increased to 45 beds. In 1909, ear work was given up, and the name of the Hospital changed from St. Paul's Eye and Ear Hospital to St. Paul's Eye Hospital. In 1910 the new building was erected in Old Hall Street opposite to the David Lewis Northern Hospital, at a total cost of £18,000, and the work was transferred to it in August, 1911. The new building contains 68 beds.

CHAPTER VI.

TOWN PLANNING AND WHAT IT CAN DO FOR LIVERPOOL.

Even the most progressive of "Futurists" in contemplating this title will be sorely tempted to look back and conjure in his imagination the vision of a Liverpool "Town-Planned" in the past. Town Planning or the art of viewing a city as a whole has come late; errors of judgment, corporate slackness, individual intrusions and ancient privileges grown to powerful vested interests are the factors which make up the scattered bric-a-brac of the unplanned town, and the making of Liverpool has been no exception to this rule. But when to these unregulated forces is added a commercial and industrial activity of the early 19th century type: a monster which with blackened face, uncouth expression, and blinded eye, packed dense masses of human toilers into streets monotonous, congested and degrading, then have we a city whose population, unconscious of primitive nature and oblivious of all the higher social enjoyments of life, becomes quite incapable of realizing what it might be and what for want of Town Planning it has lost.

But man proposes and God disposes and Liverpool has been peculiarly favoured amongst provincial towns. In her vast lagoon and in her noble river she possesses a link with nature which all the smoke and ugliness of a century of industrial prosperity cannot possibly sever. Nor are all the blessings which nature has so abundantly bestowed upon her concentrated here. There is Woolton Hill with its park-like scenery stretching away into cultivated plains below. There are the tree-lined shores of the broadening estuary : the Dingle with its fairy-like dell, its rocky shore overhung with trees and its stretches of golden sand ; the glens of St. Michael of Fulwood and of Otterspool : indentations in the coast, natural vistas ending in peeps of open water upon which may be seen floating mammoth liners, Manchester merchantmen, and coasting schooners in shoals. Then there are the sand dunes of the Wirral, and others which stretch along the Lancashire coast beyond Waterloo : bungalow retreats and golf courses permeated with salt breezes from the Irish sea. But nine miles distant are the sands o' Dee across which may be seen the blue mountains of Wales ending in the two Ormes. And this all within half an hour's journey from the centre of the town. Truly Liverpool must have been especially favoured when nature bestowed upon her such gifts.

Fortunately these possessions remain to us practically unspoiled, for though in the growth of Liverpool many irremediable mistakes have been made within the populous area of the town, the outlying districts though threatened and indeed entered upon by ill-considered intrusions of all kinds still await the projections of the town plan.

Town Planning by analysis and comparison of towns

can note the outlines of functional growth, can detect weaknesses and propose remedial measures. The Town Planner sees a city as a whole ; a shopping centre is thought of in connection with the residential area which it supplies, and a tram system is looked upon not only as a means of communication, but also as a factor in the re-distribution of the land values of a town.

In the Town Planning Review for July 1910 the plan of Liverpool was analyzed and improvements were suggested, and in the same number there appeared an article by Mr. Brodie, the city engineer, upon the development of Liverpool and its circumferential boulevard. In later numbers Professor Ramsey Muir outlined Liverpool's different districts under the heads of "Office," "Shopping," "Administrative," "Hospitality," and "Education." So that a considerable amount of thought has already been given to Town Planning and what it can do for Liverpool. In this series of articles some of the most obvious mistakes that have crept into Liverpool's plan have been noticed and corrections suggested. The work undertaken by Mr. Brodie in connection with the construction of the Queen's Drive and the new radial roads leading out of Liverpool has been very fully described, and the necessity for grouping the different types of streets and buildings in accordance with the varying functions which they were designed to perform has been clearly demonstrated. It might be well therefore briefly to review what has already been said before proceeding to notice later developments that are now in operation under the Town Planning Act, and matters which are pressing for immediate consideration as Town Planning schemes.

It has been shown that one of the most obvious defects in Liverpool's plan is the blocking of Castle street by the Custom House and the Exchange. It is an axiom in Town Planning that in Towns having water fronts, the second street should be continuous and that this is the most important street in the town. The erection of the Custom House on this important line of route has since offered great obstruction to the riverside property to the South, and similarly the imposition of the Exchange to the North has cut off the through connection between Castle street and Old Hall street. The Town Hall itself also offers considerable obstruction, but Town Halls are privileged by right of inheritance ; the little deviation of the traffic which is necessitated in passing being a pretty obeisance to the respect due to them as the first houses in the town. Had Wyatt opened up his Exchange Buildings to Old Hall street when he re-erected them in 1862 the whole of the north end of Liverpool would have been brought into immediate touch with the centre and the south. At present it is most ridiculously cut off and the cotton Exchange, intrinsically well placed, stands aloof.

A great river front is rapidly developing to the north. Foresight is required here. As each old dock is turned into a building block, warehouse property will become convertible into office property behind.

The blocking of Castle street is perhaps one of the most conspicuous defects in Liverpool's plan, but there are others ; Princes Avenue, Liverpool's one boulevard, is disconnected from the centre of the town, the University is approached through a slum, and the new Cathedral has practically no approach at all. It has been shown that a new thoroughfare worthy the name of a processional approach into Liverpool could be made

by cutting a new street as between the end of Princes Avenue and the corner of the Medical Institute at the top of Hope Street, that Mount Pleasant could be widened and that the whole of the slum property lying between Mount Pleasant and Brownlow Hill could be converted into Hotel and residential property : a scheme that would greatly enhance the value of the residential districts in this part of Liverpool and which would provide sites for the constant additions that are being made to the University and would enable this to be done in a monumental way.

Considerable discussion has recently centred on the disposal of the recently acquired Corporation property lying between St. James' Road and Great George Street, where a big housing scheme has been proposed. A proposition has been put forward by The Liverpool "Daily Post and Mercury" showing the terrace at the north end of St. James' Road razed and a Cathedral Close laid out instead. Certainly the whole question of the treatment of the approaches and surroundings of the Cathedral presses for immediate consideration. As an approach to the Cathedral, what was suggested in the Town Planning Review for July 1910 was that Renshaw street be continued through the body of St. Luke's Church at the top of Bold Street and direct up the hill. The difficulties attending this alteration are the destruction of so important a Church, and the disturbance of Rodney Street, expensive and undesirable things to carry out. However, having regard to the need for more space around the West side of the Cathedral site, and the importance of providing an adequate approach, it has been put forward as a suggestion that the tower of St. Lukes' Church be left standing, whilst the body of the Church be taken down and

re-built parallel with Berry Street and axial with the north and south. The corner block of buildings in Berry Street would require to be removed, but a site for a new block in Leece Street would do something to temporise this loss. In order to afford more space on the west side of the Cathedral, and so as to enable Rodney Street and the new Cathedral approach to emerge with effect on the Cathedral front, it was suggested that the whole of the buildings along St. James' Road be razed, and that a new terrace providing residences for the Cathedral ecclesiastics, a school for the choir, and other similar buildings be rebuilt to the new line. The road upon which these faced being set back would leave a grass space which would suggest a Cathedral Close. If the road were continued through into Park Place, altogether a greatly improved entrance into Liverpool would be provided: an entrance which would relieve Great George Street and which would separate the better class traffic proceeding towards Bold Street and Lime Street from that proceeding along Park Lane in the direction of the docks, at the same time opening up and affording magnificent views of the Cathedral in passing.

This improvement if taken in hand now could be carried out at comparatively small cost. The treatment of sites around the Cathedral needs to be considered in some such wholesale way.

These are possible improvements to Liverpool's centre but Town Planning applied to the outer circle has produced actual results. We refer to the Queen's Drive which is the work of Mr. Brodie the City Engineer. In the year 1853 an official report was published suggesting a 60 foot roadway all round Liverpool. It was not however adopted, and it remained for the present genera-

tion to actually carry out such a scheme. The Queen's Drive extends from Sefton Park on the South to Walton Church on the North, it passes through the Garden Suburb at Wavertree and outside the West Derby ward further North. It has a minimum width of 84 feet and a maximum of 108 feet and its length is about $6\frac{1}{2}$ miles. It is crossed at intervals by radial roads which are the widening of old roads or entirely new connections.

Of these perhaps Menlove Avenue is the most important. Speaking of the guiding principals which should control city planning Mr. Brodie says "The "first and most essential feature of effective Town "Planning, so far as it is likely to affect the still unbuilt "portions of the city, should be the proper provision, "at frequent intervals, of main lines of communication "for traffic in the most convenient and suitable di- "rections, bearing in mind the surface levels of the "respective areas. They should consist largely of "wide radial roads leading to and from the centre of "the city as directly as possible, combined with a lesser "but still considerable number of main roads leading "across in a direction approximately circular, taking "the business portion of the city as a centre. The "areas bounded by these main roads should be divided "up into short streets with considerable distances "between the buildings and reduced street works "surrounding open spaces." He proceeds to state that he thinks it would be an advantage if a few of these wide radial roads could be greatly widened, so that the present-day idea of parks as areas through which it is not proper to provide main thoroughfares and modern methods of travel might be modified, and that wide belts of planted open spaces leading out

into the country would be better essentially and from every point of view, especially if so arranged that they were continued in advance of building operations. He says "It is difficult to estimate what the benefit to Liverpool might be to have a few wide avenues leading out from the neighbourhood of the existing parks to the open country," and he adds "such avenues—or radial lungs—by providing exceptionally good sites for large houses on their frontage might also help to induce the more monied classes to remain within the town area." As a parkway there is no doubt the Queen's Drive will year by year be more fully appreciated, though it is doubtful if some of the very wide roads that are suggested, roads which are more than sufficiently wide for the purpose of traffic for many generations to come, would not be better as traffic roads of sufficient width, say 60 feet, the extra space being thrown into the gardens and the building line being set back some 40 feet.

But of all the civic undertakings which Town Planning can assist, that of the better housing of the working classes is the one most vital and at the moment most pressing. Liverpool may lay claim to being the pioneer city in Great Britain in the matter of the re-housing of the working classes.

In applying the principals of Town Planning to Housing the most difficult problems are encountered. The question of Housing the working classes is intimately bound up with industrial developments of all kinds. The intermittent employment of casual labour, the constant change from one place to another of those employed in the building trades, the regular employment of operatives in special industries, and the desire for segregation on the part of those in regular but

monotonous employment in the business districts, are all questions which operate very conspicuously in the housing of the working classes.

It is the business of the Town Planner to adjust all these varied conditions of labour with the means at the disposal of the city for their adequate provision in the matter of housing. The solution of the problem rests largely with the means of communication which are at the workman's disposal. Close attention to the proper utilization of land, considered in connection with means of communication, lies at the base of every town plan. The London County Council in their schemes of demolition at first gave no consideration to the possibilities of migration, but in their later undertakings housing schemes have always been made dependent upon the trams. Up to the present, Liverpool has been largely engaged in the re-housing of the casual labour classes, in which case proximity to the place of work has been considered an absolute essential, and whilst the conditions of such labour remain intermittent and uncertain, such conditions will continue to obtain.

From blocks of three stories in height with one entrance to six dwellings, Liverpool has now turned her attention to the erection of the single cottage with its separate front door. Erected on land costing something over two pounds a yard it is doubtful if this policy will not entail too great a burden on the rates, but as an experiment it is worthy of encouragement. About 60 cottages are now being completed in this way, and this, added to what has been done in the Hornby Street and other isolated areas, means that about two-thirds of Liverpool's condemned slums have been swept away. It is early to prognosticate the possibilities of Town Planning in the suburbs and the outer ring, suffice it

to say that the awful repetition of the stereotyped street which surrounds the business area and the older residential districts of Liverpool will be continued no more. The Corporation of Liverpool have within the last few weeks put the whole of the Garston area including much of the beautiful Aigburth district under the Town Planning Act, which means that they will shortly have control not only of the direction of the streets but also of the character of the buildings that will be erected thereon. A smaller area at Wavertree has also been outlined and an application for its inclusion has been approved by the Local Government Board. No doubt other areas will very shortly be scheduled and further abuses on the part of the irresponsible speculative builder will be stayed and prevented.

Outside the boundaries of the City, Woolton, proud of her unspoiled possessions, and pioneer amongst the districts surrounding Liverpool, has issued notices and committed herself to the protective clauses of the Town Planning Act. But besides all this, and in our resumè of what is being done at the moment we must not forget to mention the important work of the Co-partnership tenants at Wavertree. On land leased from the Marquis of Salisbury a Garden Suburb is being laid out on the most approved lines, and already some hundred cottages have been erected, semi-detached and in rows. What a contrast to the monotonous terraces close by ! What an object lesson for the speculative builder ! What an example of simple beauty, sound business and sensibility ! Already this undertaking is a success, the cottages become occupied as fast as they are built and being closely connected with the L. & N. W. Railway and the trams, they are convenient of access, and the already well

established theory is proved to be correct that the working classes of Liverpool can be habituated to live at any distance by tram within the radius of the penny fare.

And last but not least—last, because best known—we have the pioneer work of Sir William Lever, whose village at Port Sunlight is continually being enlarged and improved.

So much then has Liverpool accomplished for Town Planning. In the central area huge slum areas have been demolished and model dwellings erected in their stead; around the confines of the city wide boulevards have been constructed, and in the suburbs schemes have been embarked upon under the act. Here areas have been scheduled and much of the filling in has been anticipated, but the actual planning remains yet to be done. The preparation of this will call for a generous appreciation of the relations that subsist between the classes, and a deep insight into their habits and customs. In the allocation of area to purpose, mistakes can be made perhaps more disastrous than in the wrong placing of a road. One essential of a good result is to enlist the whole-hearted interest and co-operation of the landowner and the public at large; and it is to be hoped that in the preparation of the plan which is for ever to settle the destinies of Liverpool's suburban inhabitants opportunities for criticism will be afforded to and taken by not only the influential and those having a pecuniary interest but also every ratepayer whose lot it is to share the benefits that may accrue from living in a well planned town. Interest must be aroused, and the beauty spots of Liverpool preserved. Notwithstanding the increasing public interest that is being

shown in the growth of towns, there is still far too much lethargy displayed. What sort of citizens are we to allow that beautiful prospect of the estuary which extends from the Dingle to Cressington to remain unapproachable and unknown ? What sort of citizens are we to submit for one moment to the suggestion of a coal wharf being erected at the entrance to one of Liverpool's most beautiful dells ? What will posterity say of us if we continue to deface the front of our noble river with such an indiscriminate collection of buildings as we are collecting together, having practically no reference to one another or to any particular scheme, and which have never been considered as part of a town plan ?

May I venture to suggest that many of the mental diseases that afflict humanity are not entirely attributable to physical causes. Is it not a fact that mental weakness, baseness of intellect, melancholia and their consequent results insobriety and a sense of irresponsibility, are brought about by the terrible monotony of our surroundings and the gruesome associations of our lives. We cannot afford to rest on our oars and point to the efficiency of our drains ; we cannot say all is well, because there is a damp course under our walls. After all what the working classes most need is some encouragement to take a greater interest in their immediate surroundings, surroundings that will uplift their imaginations and bring a more logical system of order into their habits and their lives. To provide all this is the business of Town Planning—the modern science of which everyone has a right to expect great results.

S. D. ADSHEAD.

GEOLOGY OF THE LIVERPOOL AREA.

Within a radius of ten miles of the Liverpool Landing Stage, exposures of the following formations are to be found.

| | | |
|---------------|---------------|--|
| Recent | Blown Sand | Estuarine Sands, and Silt |
| Pleistocene | Post Glacial | Peat, Forest Beds, and Silt |
| | Glacial | Boulder Clay, and Glacial Sands |
| Trias | Keuper | Red Marl Sandstone |
| | Bunte | Upper Soft Sandstone Pebble Beds |
| | | Lower Soft Sandstone |
| Carboniferous | Coal Measures | Upper Coal Measures Middle Coal Measures Lower Coal Measures |
| | | Millstone Grit |

The lowest formation exposed is thus the Millstone grit, which is brought to the surface in one or two quarries in Knowsley Park, the seat of the Earl of Derby. Only the upper beds of it are found. The Carboniferous limestone series is not found, though just beyond our area, on the other side of the estuary of the Dee it is well shown in North Flintshire. The lower Coal measures or "Gannister beds" occur at Huyton Quarry, and in Knowsley Park, and a good section of them is seen in the L. & Y. Railway cutting at Upholland Station, where Mr. Binney, F.G.S., first found *Goniatites listeri*, and *Aviculopecten papyraceous*, fossils characteristic of this formation. The middle or productive Coal-measures are exposed and worked for coal just within the edge of our ten mile radius, between Prescot and St. Helens, where the usual abundant Flora of this formation, *Calamites*, *Filices*, and *Cycades*, has been obtained.

The Rev. H. H. Higgins, who lived at Thatto Heath, amassed by great industry a fine collection of these fossils during the construction of the Liverpool and St. Helens

Railway, and presented it to the Liverpool Museum, where it well merits inspection. The upper Coal-measures are not extensively exposed in this district, but they occur in a small area near Whiston, where characteristic red "*Spirorbis*" limestone is to be found.

The Permian formation is not represented. The Trias is the most important and predominating formation, and the City of Liverpool and Suburbs lie almost entirely on its lower division, the Bunter, the characteristic "Pebble beds" of which are about 1,000 ft. thick, while the whole Triassic group are estimated to be 3,350 ft. The Olive Mount cutting on the L. & N. W. Railway is a fine example of a section of the Pebble beds, while at Hilbre Island in the Wirral peninsula, these beds have a brecciated character. The pebbles consist mainly of Quartzite (mostly "liver coloured") vein quartzy, grit, and black chert. They are scattered about the sandstone and are not usually in contact with each other. Part of the so-called "Pebble beds" contain no pebbles and forms fine hard building stone, such as is being obtained now from the Woolton Quarry, and is being used in the building of the Liverpool Cathedral.

The Keuper sandstone is best seen on the Birkenhead side of the Mersey, where it forms a prominent ridge along Storeton, Oxton, Bidston, and Wallasey, containing numerous quarries giving good exposures, the most interesting being at Storeton, where occurs the famous "footprint bed." This is 124 ft. above the base of the Keuper, and is from 3 to 4 ft. in thickness. It contains a few thin seams of clay on which numerous footprints have been found, notably those of a batrachian, which has been named *Cheirotherium Storetonensis*. No further traces of the animal

have been found. The largest prints are from nine to ten inches long, and numerous small reptilian footprints occur in the same bed. Excellent specimens from this quarry are to be seen in the Liverpool, Bootle, and South Kensington Museums. Remains of the plant *Equisetites Keuperina* have been found at Storeton, also ripple marking, and numerous casts of rain drops.

The L. N. W. Railway cutting from Edge Hill to Lime Street Stations, and the Cheshire Lines cutting to the Central Station, show good sections of Keuper sandstone. The Marl, the highest sub-division of the Trias, occurs as red and grey marls with interstratified beds of sandstone. The lower 40 ft. of it is exposed at the top of the fine section on the South side of St. James cemetery, and here the tiny crustacean, *Estheria minuta*, can be obtained. The Marl is also exposed in several small areas in the Wirral peninsular.

The thickness of the glacial deposits in the neighbourhood varies very much. All the higher points are denuded of it, but considerable thicknesses are found in the lower areas, notably to the south between Garston and Widnes, where it probably fills up the preglacial course of the River Mersey. Good sections are to be seen along the banks of the Mersey from St. Michael's Hamlet to Garston, and in the Wirral on the estuary of the Dee, from West Kirby to Parkgate. In these localities we find an upper and a lower boulder clay separated by mid-glacial sands and gravels, the latter indicating an amelioration of the glacial condition, when shallow water conditions supervened. In the upper boulder clay numerous far travelled erratics occur, from Cumberland, the

Lake district and Scotland, such as Eskdale, Buttermere, and Criffel granites, also the well known Riebeckite from Ailsa Craig at the mouth of the Clyde, besides others from less distant parts.

Where the higher points of the district have been denuded of drift, glacial Striae have been found, running from 15° to 30° west of north. Such points are, Hilbre Island at the north west corner of Wirral, Bidston, Crosby and Mossley Hill.

The Mersey between Birkenhead and Liverpool is still excavating its old preglacial channel, which was deeper than the present one. This was proved in rather an expensive way during the making of the Mersey Railway tunnel, for when nearing completion from each side in the solid rock, boulder clay was suddenly encountered with disastrous consequences. The veteran local geologist, Melland Reade, whom we have not long lost, prophesied that this would probably occur, and he proved to be correct in his surmise. There are many interesting problems which arise in connection with the question of the preglacial course of the Mersey, for which no space can be found here.

Of post-glacial Pleistocene remains, good examples are to be found in the submerged forest beds, exposed at Dove Point near Leasowe in Wirral and also at several places along the shore between Liverpool and Southport. Many tree trunks, both prostrate and in the position of growth, have been met with while excavating the docks on both sides of the river, also remains of the whale, red deer, *Bos longifrons*, bear and probably Irish elk.

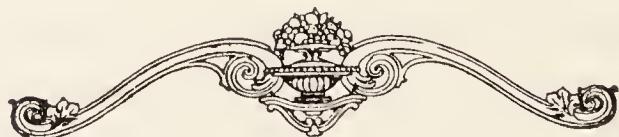
The most important recent deposits are miles of wind blown sand forming sand dunes along the coast between Liverpool and Southport, and also in the

Wirral by Wallasey. Besides making excellent golf links, they exhibit some phases of desert conditions which afford good opportunities for study, and which might cast some light on the vexed question of the mode of origin of our Triassic deposits.

Liverpool thus lies on the Western edge of the Triassic rim of the South Lancashire coal basin, the synclinal fold of the Coal-measures being faulted down against the later Trias. All the main faults of the district, which are numerous, run in a North and South direction, with some smaller intersecting faults at right angles.

For further details, Morton's "Geology of the country round Liverpool," and the Transactions of the Liverpool Geological Society should be consulted.

J. C. M. GIVEN.



APPENDIX.

PHILHARMONIC HALL.

The Philharmonic Hall in Hope Street, where will take place the annual dinner of the Association on Thursday, July 25th, the granting of degrees at 2.30 p.m. on Friday, July 26th, and the ball the same evening, is a somewhat plain building in the Italian style of architecture. The foundation stone was laid in 1846, and the hall was opened three years later. It is 135 feet long, over 100 feet wide, and is entirely free from any pillar support, one huge span of brickwork carrying the entire roof. There is seating accommodation for over 2,000 persons, and space for an orchestra of 300 performers.

ST. LUKE'S CHURCH.

At the foot of Leece Street, not far from the Philharmonic Hall, and facing Bold Street, stands St. Luke's Church, where at 2.30 p.m. on July 24th, members of the Association will have an opportunity of attending divine service. The Lord Bishop of Liverpool will preach. This edifice was consecrated in 1831, having cost £44,000 to build. The interior is highly decorated and there are numerous stained glass windows; the Chancel being modelled from the well-known Beauchamp Chapel at Warwick. The Church has accommodation for 1,250 people.

LITERARY LANDMARKS AND DISTINGUISHED RESIDENTS.

Jeremiah Horrox—"One of the greatest Astronomers this Kingdom ever produced"—was born in Liverpool (Toxteth Park) 1619; his studies and observations were made at Hoole, where he predicted, and was the first person to witness, the transit of Venus over the sun. He died in 1641, aged twenty-two years.

In Duke Street was born Felicia Dorothea Hemans, the talented author of "The Stately Homes of England" and "Casabianca." The Scottish poet Thomas Campbell lived in Duke Street for some time, and John Howard—the Philanthropist—stayed in the same street when visiting Liverpool. The Medical Institution stands on the site of William Roscoe's birthplace, and his friend and contemporary, Dr. James Currie, the biographer of Burns, spent the greater part of his life in Liverpool. Nathaniel Hawthorne's office, when U.S. Consul, was in Brunswick Street, and he resided from 1853 to 1855 at No. 26, Rock Park, Rock Ferry. Washington Irving was in business in the Goree Arcades, in 1815. No. 62, Rodney Street was the birthplace of William Ewart Gladstone, and at No. 9 in the same street Arthur Hugh Clough, the poet, and his sister Anne J. Clough, the first principal of Newnham, first saw the light. In Basnett Street was born Charles James Mathews, actor and dramatist, and some time manager of Wallack's Theatre, New York. At 20, Maryland Street, Thomas Carlyle, the sage of Chelsea, was a frequent visitor. At the Dingle, Matthew Arnold died while on a visit to the Croppers. Mrs. Oliphant lived here for many years. To mention all the eminent personages who have at one time or another made Liverpool their home would occupy too much time and space to serve practical purposes, but the list includes, Hall Caine, George Stubbs, the animal painter, Walter Crane, George Gibson, Richard Le Gallienne, William Watson, the poet, Dr. John Watson ("Ian Maclaren"), Rev. James Martineau, Dean Howson, and Henry W. Lucy—"Toby" of Punch.

GENERAL PROGRAMME.

BRITISH MEDICAL ASSOCIATION.

LIVERPOOL, JULY 1912.

TUESDAY JULY 23rd.

| | | |
|------------|---|----|
| 8.0 p.m. : | Royal Court Theatre | .. |
| | Reception and President's Address. | |
| | Musical Programme. | |
| | WEDNESDAY JULY 24th. | |
| 9 a.m. | Roman Catholic Service. Pro-Cathedral. Copperas Hill. | |
| 2.30 p.m. | Anglican Service. St. Luke's Church .. | |

PROGRAMME OF ENTERTAINMENTS

ARRANGED WEDNESDAY JULY 24th. No. of
Guests invited.

| | | |
|----------------------------------|--|------------------------|
| 3-30 p.m. | Mrs. Robert Jones' Garden Party at Druid's Cross, Wavertree. | 1000 |
| 3-5 p.m. | S.S. "Cedric" (White Star Line) in Canada Dock: Afternoon Tea. | 200 |
| 3-5 p.m. | S.S. "Corsican" (Allan Line) in Canada Dock: Afternoon Tea. | 200 |
| 3-5 p.m. | Newspaper Printing Offices "Post" and "Courier." | 200 |
| 3.0 p.m. | Diamond Match Works, Bootle: Afternoon Tea. | 150 |
| 3.0 p.m. | Johnson's Dye Works: Afternoon Tea .. | 300 |
| 4-6 p.m. | Birkenhead Ferries' River Trip: Afternoon Tea. | 500 |
| 4.0 p.m. | Ogden's Tobacco Works. | 50 |
| 3.0 p.m. | Fairries Sugar Works... | 50 |
| 3-4 p.m. | Cotton Exchange Buildings. | 50 |
| Morning | Speke Hall | 60 in parties of 12 |
| 8-11.30 p.m. | Soiree, Walker Art Gallery, William Brown Museum and Library. .. | 4000 |
| | THURSDAY, JULY 25th. | |
| 3-5.30 p.m. | Wallasey Ferries' River Trip: Afternoon Tea by Dr. Oldershaw. .. | 500 |
| 3-5 p.m. | Steamship "Hilary" (mosquito proof) Booth S.S. Company. Afternoon Tea. .. | 200 |
| 2.30 p.m. | Mr. Robert Jones' and Dr. Macalister's Party to Heswall Hospital. .. | 200 |
| 3-5 p.m. | Cathedral Works and Cathedral (Lady Chapel) .. | 200 |
| Any time between 2 and 5 p.m. | Mersey Docks and Harbour Board will show their :— | |
| | 1. Tobacco Warehouses. .. | |
| | 2. New Gladstone Dock. .. | |
| | 3. Canada Graving Dock. .. | |
| | 4. Lairages, Birkenhead. | 125 |

| | | | | | |
|-----------|--|----|----|-------------------------|------|
| 3.0 p.m. | Diamond Match Works, Bootle: | | | | |
| | Afternoon Tea. | .. | .. | .. | 150 |
| 3.0 p.m. | Johnson's Dye Works, Bootle: | | | | |
| | Afternoon Tea. | .. | .. | .. | 300 |
| 3.0 p.m. | Dr. Street's Garden Party. | .. | .. | .. | 200 |
| 3-5 p.m. | Elder Dempster Steamer. | .. | .. | .. | 120 |
| 3.0 p.m. | Fairrie's Sugar Works. | .. | .. | .. | 50 |
| 3.0 p.m. | Electric Power Station, Lister Drive. | .. | .. | .. | 300 |
| 3.30 p.m. | Liverpool Garden Suburbs. | .. | | | |
| | Afternoon Tea. | .. | .. | .. | 200 |
| 3.30 p.m. | Mrs. Paul's Garden Party, Hoylake. | .. | .. | .. | 100 |
| 3-5 p.m. | Cammell Laird's Shipbuilding Works, Birkenhead. | .. | .. | .. | 200 |
| 2.0 p.m. | Competition for Ulster Cup at Hoylake Golf Club. | .. | .. | .. | |
| Morning | Speke Hall. | | | 60 in parties of 12. | |
| 5.30 p.m. | Lord Derby's Garden Party at the: Botanic Gardens. | .. | .. | .. | 800 |
| 7.15 p.m. | Dinner at Philharmonic Hall. | .. | .. | .. | 400 |
| 8.0 p.m. | Performance of "Mrs. Gorringe's Necklace," Royal Court Theatre. | .. | .. | .. | 1600 |

FRIDAY JULY 26th.

| | | | | | |
|---------------------|--|----|----|-------------------------|-----|
| 1.0 p.m. | Lord Derby's Luncheon. (Chancellor of at Town Hall. the University). | .. | .. | 80 | |
| 1.30 p.m. | Luncheon, Sir William Lever, Port Sunlight. | | .. | .. | 100 |
| Morning | Speke Hall. | | .. | 60 in parties of 12. | |
| 2.30 p.m. | Graduation Ceremony (Honorary Degrees) Philharmonic Hall. | | | | |
| Any time between | | | | | |
| 2 and 5 p.m. | Mersey Docks and Harbour Board will show their :— | .. | .. | | |
| | 1. Tobacco Warehouses. | .. | | | |
| | 2. New Gladstone Dock. | .. | | | |
| | 3. Canada Graving Dock. | .. | | | |
| | 4. Lairages, Birkenhead. | .. | .. | .. | 125 |
| 3-5.30 p.m. | S.S. "Lusitania" (Cunard Line) in the River, tender from Prince's Stage. | | | | |
| | Afternoon Tea. | .. | .. | .. | 500 |
| 3.30 p.m. | Sir James and Lady Barr's Garden Party at Calderstones Park. | .. | .. | 2000 | |
| 2.30 p.m. | Port Sunlight. Afternoon Tea. | .. | .. | 800 | |
| 2.0 p.m. | Golf Match at Formby Golf Club. Lancashire and Cheshire Members. versus the rest. | .. | | | |
| 9.0 p.m. | Ball at the Philharmonic Hall. | .. | .. | 1000 | |

PROGRAMME OF EXCURSIONS.

EXCURSIONS ARRANGED FOR FRIDAY, JULY, 26th,
1912

EXCURSION A. (LIMITED TO 150 MEMBERS OF THE ASSOCIATION).

Blackpool.

Tickets 5/3.

Itinerary :—

- | | |
|------------|---|
| 12.30 p.m. | Assemble Exchange Station (Members of Committee will wear white rosettes.) |
| 12.50 p.m. | Leave by special train for Blackpool ; visit Promenade, Piers, Tower, Palace, Winter Gardens, and other places of interest. |
| 4.30 p.m. | Lunch at the Tower by invitation of the Mayor (John Collins, Esq., J.P.) and Corporation. Visit places of entertainment by invitation in evening and return at convenience. (Return trains 6.55, 7.53, 8.15, from Blackpool, Central, or 10.0 from Blackpool, Talbot Road). Free admission to most places of entertainment will be granted to Members. |

EXCURSION B. (LIMITED TO 20).

Penmaenmawr and Pendyffrynn Hall. Tickets 7/1.

- | | |
|------------|--|
| 9.30 a.m. | Assemble at Liverpool Landing Stage at gangway for Birkenhead Boat (Members of Committee will wear white rosettes.) |
| 9.40 a.m. | Leave by boat for Birkenhead Landing Stage. Walk to adjacent Woodside Railway Station. |
| 10.0 a.m. | Leave by train for Penmaenmawr. |
| 12.47 p.m. | Arrive Penmaenmawr and visit Pendyffrynn Hall where Dr. Dobson will entertain the Members to Luncheon and afternoon tea ; subsequently the Members will be driven to Llandudno Junction for the train. |
| 6.20 p.m. | Leave by Bangor Express. |
| 8.27 p.m. | Arrive at Birkenhead. |
| 8.40 p.m. | Arrive at Liverpool Landing Stage. |

EXCURSIONS ARRANGED FOR SATURDAY, JULY 27th,
1912.

EXCURSION C. (LIMITED TO 200)

Chester and Eaton Hall.

Tickets 3/-.

Itinerary :—

- | | |
|------------|---|
| 9.30 a.m. | Assemble on Landing Stage at gangway for Birkenhead Boat. (Members of Committee will wear white rosettes). |
| 9.40 a.m. | Leave by Boat for Birkenhead Landing Stage. Walk to adjacent Woodside Railway Station. |
| 10.0 a.m. | Leave by train for Chester (reserved carriages). The journey traverses the Wirral Peninsula and passes Lever's model village of Port Sunlight. |
| 10.52 a.m. | Arrive Chester. Visit places of interest in city. Cathedral (under guidance of the Ven. Arch-deacon Barber. Organ Recital on new organ by Dr. Bridge). Town Hall (Civic Plate and Insignia will be shown by the Town Clerk). Walls, Crypts, Rows, Old Houses and places of historic interest. St. John's Church (Ancient Cathedral). Grosvenor Museum (Relics of Roman Chester will be demonstrated by Professor Newstead). |
| 1-2 p.m. | Lunch at Town Hall provided by the Chester Medical Society. |
| 2.30 p.m. | Leave Dee Steamboat Company's Stage by special steamer for Eaton Hall. |
| 3.45 p.m. | Arrive Iron Bridge and walk through Eaton Park to Eaton Hall. |
| 4.0 p.m. | Tea by invitation of His Grace the Duke of Westminster |
| 5.15 p.m. | Leave Eaton Hall. |
| 5.30 p.m. | Leave Iron Bridge for Chester. |
| 6.45 p.m. | Arrive Chester |
| 7.15 p.m. | Leave Chester (General Station) for Birkenhead. |
| 8.0 p.m. | Arrive Liverpool Landing Stage. |

EXCURSION D. (LIMITED TO 200).

Buxton.

Tickets 5/11.

- | | |
|------------|---|
| 10.15 a.m. | Assemble Central Station (Members of Committee will wear white rosettes). |
| 10.30 a.m. | Leave Central Station. |
| 12.40 p.m. | Arrive Buxton. |

- 2.0 p.m. Lunch at invitation of Buxton Medical Society.
Visit Gardens, Band, etc.

3.30-4.30 p.m. Tea.

5.12 p.m. Leave Buxton.

7.0 p.m. Arrive Liverpool Central Station.

EXCURSION E. (LIMITED TO 100).

| Southport. | Tickets 2/6. |
|--|--|
| 10.15 a.m. Assemble Exchange Station (Members of Committee will wear white rosettes). | |
| 10.30 a.m. Leave for Southport. | |
| 11.7 a.m. Arrive Southport. The party will be received by the Southport Medical Society, and conducted to the various places of interest, Infirmary, Convalescent Hospital, Pier, Marine Drive and Lake, Zoological Gardens, &c. | |
| 1.30-2.30 p.m. Lunch at the Victoria Hotel by invitation of the Southport Medical Society. | |
| | In the afternoon a Garden Party will be given in Hesketh Park by the Mayor and the Mayoress. |
| | The Observatory will be open and the instruments demonstrated. |
| | Return at visitors' convenience. Trains frequent. |

EXCURSION F. (LIMITED TO 200).

| Llandudno. | Tickets 4/-. |
|------------|---|
| 10.15 a.m. | Assemble Princes Landing Stage (Member of Committee will wear white rosettes). |
| 10.45 a.m. | Leave by North Wales Steamship Company's Steamer "La Marguerite." |
| 1.0 p.m. | Arrive Llandudno. |
| | The party will be met by representatives of the Reception Committee and will be conducted to the Town Hall where they will be officially welcomed by the Chairman of the Council (Pierce Jones, Esq). and other members of the Reception Committee. |
| 1.30 p.m. | Luncheon at the Town Hall by invitation of the Chairman and Members of the Urban District Council. |
| 2.45 p.m. | Motor Drives. And visit to Great Orme's Head. (The Directors of the Great Orme Tramway cordially invite members to use their cars free of charge). |
| 5.0 p.m. | Leave Llandudno Pier for return journey. Members desiring to stay in Llandudno over the week-end can return any time during the next week on payment of 1/- extra fare. |

EXCURSION G. (LIMITED TO 100).

Isle of Man.

Tickets 6/-.

- 9.30 a.m. Assemble Princes Landing Stage, Liverpool.
 (Members of Committee will wear white rosettes).
- 9.45 a.m. Leave by Isle of Man Steampacket Company's Steamer.
- Arrive Douglas and proceed to the Town Hall.
 Motor tours have been arranged for the Members to visit places of interest in the Island.
- 5.0 p.m. Reception by the Mayor and Corporation at Villa Marina Gardens.
- 6.30 p.m. Dinner by invitation of the Mayor and Corporation on board the steamer "Empress Queen."
- 8.0 p.m. The Steamer leaves for return journey to Liverpool.
- Members can arrange to stay over the week-end if they so desire.

The times and fares of these Excursions are approximate.

Members desirous of taking the opportunity of visiting these places of interest and health resorts are requested to make application for tickets on or before July 17th, to ensure a ticket being allotted, which will be done in order of priority of application.

In many cases the Excursion can be prolonged over the week-end or a longer period.

All communications and applications, accompanied by remittance for tickets, to be addressed to:—

Dr. Francis W. Bailey,
 51a, Rodney Street,
 Liverpool.

During the week of the Meeting enquiries and applications for Tickets should be made at the Excursion Department in the Reception Room, St. George's Hall, Liverpool.

MOTOR EXCURSIONS.

Various Routes.

The following routes have been outlined so as to give visitors a general idea of the surrounding country. In most cases only the outward route is given, but the return journey may often be made by one of the other routes.

Route 1. Aintree, Ormskirk, Preston, and the North.

Leave Liverpool by Scotland Road, keep right at Rotunda Theatre. At 3 miles, Walton Church on right, contains very early Norman font. Keep left at Black Bull, Aintree. (Road to right leads to Kirkby. Church contains exceedingly fine Norman font). Pass on right Aintree race course, where Grand National is run. (Roads to left here lead to Sefton. Fine Church containing good old wood-work, tombs etc, and on to the old villages of Ince Blundell, Little Crosby, and Great Crosby. In the main street of the latter is a huge boulder from the local boulder clay). Ormskirk, interesting Church with spire and square tower. Latter built to contain the bells of Burscough Priory, removed here after the dissolution. (Left to Southport, right to Upholland—fine Church, monastic ruins, old palace of the Stanleys, Roman Catholic College, good museum—and Wigan, mining town, fine Church). Straight on Burscough—Priory remains in field on right. Rufford —fine old black and white Hall. Winding roads to Penwortham—remains of old Castle. Cross Ribble by narrow mediæval bridge to Preston. West to Blackpool and Fleetwood. East to Blackburn. North to Lancaster, Kendal, and the Lake district. Windermere is within the scope of a day's run.

Route 2. Warrington, Macclesfield, Buxton, Derbyshire, etc.

Leave Liverpool by London Road, straight on to Prescot. (On left, Knowsley, principal seat of the Earl of Derby.) Rainhill, county Asylum on left. Over Bold Heath (Bold Old Hall, moated, $\frac{1}{2}$ mile to left), Warrington. (Left, to Winwick—county Asylum, interesting old Church and Saxon Cross). Right, over Warrington Bridge, where the Roman Road (Watling Street) crosses the Mersey. Left, by fine swing bridge over Ship Canal, on to Knutsford. Sharp to left and on to Chelford. Over railway bridge. Cross roads at Monks Heath. (Right to Stockport and Manchester. Left to Congleton.) Straight on to Broken Cross. (Left road leads to Prestbury, extremely interesting village, old black and white house opposite fine Church, which retains its ancient sanctus bell. Norman Chapel and Saxon Cross. Right to Gawsworth old Church, black and white hall and ditto Vicarage, ancient tilting ground, said to be last remaining). Straight on to Macclesfield—fine old Church, etc. Beyond Macclesfield, roads lead by Mam Tor to Castleton (Peveril Castle) and Sheffield, or by Cat and Fiddle to Buxton.

Route 3. Warrington, Congleton, Northwich.

Same as Route 2 as far as Monks Heath. Right past Capesthorne Hall and Rede's Mere to Siddington, black and white church, good interior. Marton, black and white church. Congleton, fine black and white Inn. Astbury, finest perpendicular church in Cheshire, many interesting features. Moreton Old Hall—grand moated black and white hall—finest in Cheshire. Straight on to Red Bull. Right at Cross Roads. Lawton Hall on right. Straight on to Sandbach, remains

of three fine sculptured crosses, old hall and houses. Middlewich, fine Church. Northwich, centre of Cheshire salt industry. Right and then left to Great Budworth, fine Church. Stretton. Warrington.

**Route 4. Speke Hall, Widnes Transporter Bridge.
Delamere Forest, Beeston Castle. Chester.**

Leave Liverpool by Princes Road, and Croxteth Road, enter Sefton Park and keep to right, through Aigburth Gate to Garston and Speke Hall (By kind permission of Miss Watt, this very perfect specimen of mediæval domestic architecture may be visited. See page 179) At Speke Church, right to Hale. In church yard, tomb of celebrated giant “the Childe of Hale.” Left to Widnes—chemical town, cross Mersey and Manchester ship canal by transporter bridge. Left to Halton, John of Gaunt’s Castle. Right on, striking main road at Sutton Weaver. Right, and cross canal and river Weaver to Frodsham. (Straight on to Helsby and Chester.) Left, opposite Bears Paw, under railway to Overton, by winding roads—always keeping to right at forks, pass Hatchmere (lake) on right. Right at next cross roads and through Delamere Forest to Mouldsworth. Left at main road, through Ashton to Watling Street, right to Tarvin, good Church, left and past Church to Tarporley. Straight on to cross roads—Four Lane ends—right. Under railway at Beeston Castle station, and first turn to right to Beeston Castle, on by winding roads to Chester-Whitchurch main road. Right, over Rowton Moor to Chester.

**Route 5. Chester, Wrexham, Llangollen, Corwen,
Bettws y Coed.**

Landing Stage, cross to Birkenhead, left, up hill. (Second street on left,—Church Street—leads to ruins of

St. Mary's Priory). Rock Ferry, Port Sunlight (Lever's model village) Through Bromborough and Eastham to Chester. (See special guide) Leave Chester by Grosvenor Bridge, entrance to Eaton Park seat of Duke of Westminster, on left. Straight on to Rossett, (dangerous bend over bridge). Marford Hill. (Trevor Arms at foot of hill, behind which a pathway leads to the Roft, a fine Roman camp, with fine view) Ascend hill with views of Vale Royal, and Beeston Rock etc. Gresford Church, $\frac{1}{4}$ mile on right, good, fine bells, misereres. Wrexham, church, extremely fine tower. Right. Ruabon, Llangollen, Corwen, Bettws-y-coed.

Route 6. Queens Ferry, Hawarden, and Wrexham.

Same as route 5 to Eastham. Up hill, and after cross road, right at fork, cross railway at Ledsham station and first turn on left (sharp). Queens Ferry Bridge. Straight on to cross roads. (Right coast road to Flint and Llandudno. Left to Chester). Straight on. First on left, Hawarden Castle, Park, (admission on presentation of member's ticket) Right to Hope church and Wats Dyke, Caergwrle castle, Wrexham.

Route 7. Mold, Ruthin, Cerrig y Druidion, Pentre Foelas, Bettws y Coed.

Same as route 6 as far as Queens Ferry, Straight on to Mold. Left. First on right, to Loggerheads Inn, Valley of Alyn, over Clwydian Range to Ruthin (left up Vale of Clwyd to Corwen). Opposite Castle Hotel, steep street over Clwyd Bridge. Left at fork. Clawdd Newydd. Cerrig-y-druidion. Pentre Foelas. Bettws-y-Coed.

Route 8. Mold, Denbigh, Bettws-y-Coed or Llangollen.

Same as route 7 to Mold. Right, and right at Church, through Nannerch, Bodfari, Denbigh, Castle (good).

Over moors past Sportsman's Arms to Pentre, right to Bettws-y-Coed, left to Llangollen.

Route 9. Queens Ferry, Holywell, St. Asaph, Colwyn Bay, Llandudno, Conway, Bangor.

Same as route 5 to Queens Ferry. Right at cross roads. Flint, castle. Bagilt, left at fork to Holywell—St. Winifred's Well. St. Asaph (Cathedral). Bodelwyddan, marble church. Abergele. Colwyn Bay. Mochdre, and on to fork. (Left by Glan Conway and right bank of Conway to Llanrwst and Bettws-y-Coed.) Right to Conway, old walled town and castle. Penmaenmawr, and Bangor.

Route 10. Flint, Holywell, Rhuddlan, Rhyl.

Same as route 9 to Holywell, leave by St. Asaph road, and take road on right to Newmarket, past Llyn Helig, Newmarket (Gop-hill said to be the largest tumulus in Britain.) Dyserth (church, fine old Jesse window, curious tombs, waterfall). Rhuddlan (castle). Rhyl.

Route 11. Chester, Nantwich, Broxton, Carden, Farndon.

Chester as route 5. Leave by East gate Street, along Watling Street to Tarvin, right to Tarporley. Calveley. Acton, church on right. Darfold Hall. Nantwich, excellent church with lantern tower, old houses. Return to Acton, sharp to left at church. Left at next turn, and by country roads always bearing to left through Larden Green, cross Whitchurch—Tarporley Road through Cholmondeley deer park (castle right) to Broxton. Cross Chester—Whitchurch Road. Carden Hall (black and white) on left. Farndon (ancient bridge over Dee) right at Farndon through Alford to Chester.

Route 12. Circular tour of the Wirral Peninsular.

Landing Stage, to Birkenhead, through Hamilton Square to Birkenhead Park, right to Bidston, (Obser-

vatory, old hall) Moreton, Hoylake, West Kirby, Thurstaston, Heswall, Hinderton, Shrewsbury Arms, right to Neston and Parkgate. Straight on to Chester. Leave Chester by same road, but take right at fork for Birkenhead.

WHAT TO SEE IN LIVERPOOL.

The Landing Stage, over a half a mile in length, where ocean liners land and embark their passengers. The Stage floats on pontoons and is joined to the river wall by means of massive bridges. Ferry boats sail from here to half a dozen places on the Cheshire side of the river.

The Docks, the finest and largest in the world, are best inspected by means of the Electric Overhead Railway which runs from end to end, a seven miles panorama of the Docks and River.

The Dock Board Offices, on the Pier Head, constitute one of the finest additions to Liverpool architecture. They were erected at a cost of £25,000. The beauty of the structure is best seen from a ferry boat approaching the Stage.

The Royal Liver Building, one of the tallest skyscrapers in the country, containing 17 stories, and 300 feet in height. The clock is bigger than Big Ben, each dial being 25 ft. in diameter, the minute hand 14 ft. long and at one point 3 ft. wide. It never needs winding, being worked by electricity and regulated direct from Greenwich.

The Town Hall. At the top of Water Street, the oldest public building in Liverpool, where the City Council deliberates. Open daily; admission by ticket from any City Councillor. Contains a unique collection of antique silver, dating from the sixteenth century.

The Exchange, a fine square at the rear of the Town Hall with a handsome monument in memory of Nelson designed by Matthew Charles Wyatt.

St. George's Hall in Lime Street. The crowning architectural feature of Liverpool, designed by Harvey Lonsdale Elmes; contains the Law Courts and a fine Hall, which for grandeur vies with any in the country. In the front is a large plateau which is the scene of many important gatherings.

Walker Art Gallery at the head of William Brown Street on the North side of St. George's Hall. Presented to the City by Sir Andrew Barclay Walker, Bart, during his mayoralty. The permanent collection contains many famous works of art. Open daily, also Sunday (October to May) 2 to 4.30 p.m. Saturday evenings (October to May) till 8 p.m. Fridays, admission 6d., other days free.

Picton Reading Room adjoins Art Gallery and is named after Sir James Picton, the local historian. The reference library possesses over 160,000 volumes. Admission free; open 10 a.m. to 9.45 p.m. Fridays 10 to 6.

The Museum also in William Brown Street contains zoological, botanical, geological and mineralogical specimens and a fine aquarium. The natural history section includes one of the largest collections of mammals and birds in the country, numbering upwards of 50,000 specimens. The Mayer Museum is very rich in pottery and ancient coins. Open daily (Wednesdays and Sundays excepted). Admission free. Facing the above suite of buildings are—

St. John's Gardens formerly the site of a Church and graveyard. Here are tastefully laid out flower beds and walks and statues of William Ewart Gladstone

and other public men. In the centre is a fine memorial to the officers and men of the King's Liverpool Regiment who fell in the Burmese, Afghan, and South African wars.

Queen Victoria Memorial at the top of Lord Street on the site of the Liverpool Castle. The statue of her late Majesty by Mr. C. J. Allen stands under a dome and is approached by four flights of steps surmounted by bronze and statuary.

Liverpool Cathedral now in course of erection on St. Jame's Mount. The foundation stone was laid by the late King Edward in 1904 and the Lady Chapel is already in use for daily service. The edifice is in the Gothic style and is built of local red sandstone. Daily service (choral) Sundays 3 p.m. weekdays 5 p.m.

Gladstone's Birthplace. The great statesman was born at 62 Rodney Street, (the Harley Street of Liverpool and home of the medical profession). A memorial tablet denotes the house.

Aigburth Cricket Ground. The home of County Cricket in Liverpool, where the Lancashire team recently met the Australians.

Parks. One of the most popular of Liverpool's many beautiful parks is Calderstones Park, about $5\frac{1}{2}$ miles from Town Hall, at the entrance to which are the Calderstones, dating from the time of the Druids. Sefton Park is nearly as large as Hyde Park, and infinitely more beautiful. Newsham Park is notable as containing the Judge's residence. These and other smaller parks may all be easily reached by tramcar.

STEAMBOAT RIVER TRIPS.

New Brighton. A favourite excursion with all visitors. From the Tower a splendid view may be obtained.

Near here is a Battery commanding the mouth of the river and a lighthouse for the guidance of incoming liners. Fare 3d.

Seacombe and Egremont. Fare 1d. and 2d. A fine view of the river and docks is obtained from the promenade which is over two miles in length.

Birkenhead. A flourishing shipbuilding centre directly opposite Liverpool, where are launched many battleships, cruisers and destroyers. Bidston Hill, easily reached by car from the ferry, is noted for its Observatory from which the one o'clock time gun is fired. Fare 1d.

New Ferry and Rock Ferry. Fare 1d. and 2d. respectively. From the first named, Port Sunlight, the model village and works of Messrs. Lever Bros. is easily reached.

Eastham. Fare 4d. Hourly service from 11 a.m. to 10 p.m. from Easter to September. A delightful rural spot with 50 acres of beautiful woods and gardens and pleasure grounds.

PLACES OF INTEREST IN THE NEIGHBOURHOOD.

Knowsley. The principal seat of the Earl of Derby, Chancellor of the University of Liverpool, and present Lord Mayor of the City. Lord Derby has given his permission for members attending the meeting in Liverpool to motor through Knowsley Park, but as there are alterations going on in the house, visitors cannot view that part.

Chester (16 miles). A quaint and interesting City surrounded by old Roman Walls, possessing a fine Cathedral and many ancient timbered houses. For scenery the River Dee is unrivalled. It affords access to Eaton Hall, the seat of the Duke of Westminster,

and Hawarden the home of Gladstone. By rail via L. & N. W., G.W. and G.C. Railways.

Southport ($18\frac{1}{2}$ miles) is a favourite watering place and is attractive on account of its many gardens and fine boulevards. The Lancs. and Yorks. Railway Company's electric trains leave Exchange station every twenty minutes.

Hoylake ($7\frac{1}{2}$ miles) is famous as the home of the Royal Liverpool Golf Club. By train via Seacombe Ferry and Wirral Railway or via Mersey Tunnel Electric Railway.

SEA EXCURSIONS.

Blackpool, the Mecca of vast hordes of pleasure seekers. Here are an "Eiffel" Tower, a Great Wheel, three Piers and a splendid stretch of beach. Frequent sailings are advertised and there is also a regular service of trains.

The Isle of Man. Magnificent steamers sail to Douglas every week-day, the trip taking $3\frac{1}{2}$ hours each way and allowing over two hours on shore. The island is full of natural beauty and historical associations. Day excursions : fare 4/- steerage and 6/- saloon.

Llandudno and Menai Straits. The fine vessels of the North Wales S. S. Co sail daily to Llandudno, Bangor and other places set in surroundings of great beauty on the Menai Straits, and also around the Isle of Anglesey.

Theatres. Royal Court Theatre and Opera House, Queen Square ; Shakespeare Theatre, Fraser Street, London Road ; Repertory Theatre, Williamson Square ; Empire Theatre of Varieties, Lime Street ; Royal Hippodrome, West Derby Road ; Olympia, West Derby Road.

Picture Theatres. Palais de Luxe, Lime Street ; Electra Theatre, London Road ; Liverpool Picture-drome, Kensington ; New Century Picture Hall, Mount Pleasant.

ITEMS OF INTEREST.

The population of our city (1911) is 746,566.

The rateable value of Liverpool is £4,778,255.

The acreage, exclusive of the River area, is 16,619 acres or 26 square miles.

The birth rate for 1911 was :—Liverpool 30.0, Birkenhead 28.4 ; Bootle 30.2 ; Wallasey 22.1.

The death rate for 1911 was :—Liverpool 19.5 ; Birkenhead 16.0 ; Bootle 18.3 ; Wallasey 12.6.

There are nine Parliamentary divisions.

The number of voters on the 1912 Parliamentary list is 87,659.

There are 19 honorary freemen of the City.

The Corporation have erected nearly 3,000 houses for the working classes, providing for 14,000 people, the gross annual rental being £28,500.

There is a charge on the ratepayers of $2\frac{1}{4}$ d. in the £ for workmen's dwellings which are not self supporting.

Liverpool possesses the best water supply in the country.

The Corporation own the Valley of the River Vyrnwy in Wales, and the water is conveyed through miles of pipes.

There are six hospitals for infectious diseases, with 1,100 beds.

Liverpool has 162 public elementary schools, with accommodation for 132,075 scholars.

There are 58 Council Schools, 56 Church of England, 40 Roman Catholic, and 8 Wesleyan or Undenominational.

There are 3,908 teachers, three-quarters of whom are female.

The combined area of Liverpool's open spaces is about 1000 acres.

There are 116 miles of Tramway track and 25 distinct routes.

The average length of a penny fare is 2 miles 794 yards.

The Capital expenditure to 1910 on the Corporation electricity supply system was £2,138,084.

The Corporation maintains six public markets.

A profit of £17,374 was derived from the markets in 1911.

Over 12,000,000,000 gallons of water a year are supplied to Liverpool, or 31.72 gallons per head of the population.

The total number of bathers at Liverpool's 15 public baths in 1911 was 1,659,967.

The rates raised in the City yearly amounted to nearly £1,500,000.

The Borough of Bootle pays Liverpool over £8,000 a year for water.

The yearly revenue for the Mersey Docks and Harbour Board is nearly £2,000,000.

LIVERPOOL CLUBS.

CLUBS EXTENDING THE PRIVILEGE OF MEMBERSHIP TO MEMBERS OF THE BRITISH MEDICAL ASSOCIATION.

| | |
|---------------------------------------|-----------------------------|
| The Athenæum ... | ...Church Street. |
| Conservative Club ... | ...Dale Street. |
| The Junior Conservative Club Ltd. ... | ...31, North John Street. |
| Exchange Club ... | ...Fenwick Street. |
| Liverpool Club ... | ...Royal Liver Buildings. |
| Lyceum Newsroom ... | ...Bold Street. |
| Racquet Club ... | ...Upper Parliament Street. |
| Reform Club ... | ...Dale Street. |
| Junior Reform Club ... | ...Stanley Street. |
| The Old Hall Club Ltd. ... | Brown Buildings Exchange. |
| University Club ... | ...Mount Pleasant. |

GOLF CLUBS.

| | |
|-------------------------------|---------------------------|
| The Birkdale Golf Club ... | Birkdale, Near Southport. |
| Formby Golf Club ... | Freshfield |
| Royal Liverpool Golf Club ... | Hoylake. |
| Wallasey Golf Club ... | Wallasey. |
| West Lancashire Golf Club ... | Hall Road. |
| Woolton Golf Club ... | Woolton. |

GOLF CLUBS.

The visitor to Liverpool will find plenty of high class clubs within easy reach.

The most important are :—

The Royal Liverpool G.C. (Telephone 22 and 122 Hoylake) 18 Holes ; green fees 3/- per day ; book to Hoylake, Wirral Railway, via Mersey Tunnel (Central Station) or Landing Stage.

Formby G.C. (Telephone 167 Formby) 18 Holes ; green fees ; 2/6 Monday to Friday ; 10/- Saturday and Sunday ; book to Freshfield, L. & Y. Railway.

West Lancashire G.C. (Telephone 302 and 306 Crosby) ; 18 Holes ; green fees 2/6 per day ; book to Hall Road, L. & Y. Railway,

Wallasey G.C. (Telephone 30 Liscard) 18 Holes ; green fees, 2/6 per day ; book to Wallasey, Wirral Railway.

Birkdale. (Telephone 220 Birkdale) 18 Holes ; green fees 2/6 per day, Saturday and Sunday 5/- ; book to Birkdale, L. & Y. Railway.

Hesketh. (Telephone 445 Southport) ; 18 Holes ; green fees 2/6 per day ; book to Hesketh Park, L. & Y. Railway.

Ormskirk. (Telephone 112 Ormskirk) ; 18 Holes ; green fees 2/6 per day ; book to Ormskirk, L. & Y. Railway.

Other good clubs are the Bromborough, Heswall, Huyton, Leasowe, Liverpool Banking and Insurance (Formby) Prenton, Southport and Ainsdale, West Cheshire, West Derby, Woolton.

LADIES' CLUBS.

The West Lancashire Ladies' Golf Club is considered one of the best ladies' clubs in the country. The course is 18 Holes ; green fees 2/6 per day ; 7/6 per week ; book to Hall Road, L. & Y. Railway ; Telephone 305 Crosby.

The Hoylake Ladies' and Wirral Ladies' Clubs are also very popular.

LIVERPOOL CAB FARES.

One Mile or part of a Mile, 1/-.

After the first Mile, for each half or less part of a Mile, 6d.

Per hour or part of an hour, 2/-.

After midnight, half fare extra.

Taxi-cabs 6d. per half mile and 2d. per every additional sixth of a mile.

All fares include the carriage of luggage—a four wheeler 2 cwts, and a hansom 1 cwt.

The cab fare from Lime Street and Central stations to the Landing stage is 1/6 and from Exchange Station 1/-.

HOTELS AND HYDROS.

Midland Adelphi Hotel, Lime Street.
 North Western Hotel, Lime Street.
 Exchange Station Hotel, Tithebarn Street.
 Compton Hotel, Church Street.
 Shaftesbury Hotel, Mount Pleasant.
 Laurence's Hotel, Clayton Square.
 Hydropathic Hotel, Woolton.
 Victoria Hotel, New Brighton.
 Prince of Wales Hotel, Southport.
 Palace Hotel, Birkdale.
 Kenworthy's Hydro, Southport.
 The Hydro, West Kirby,
 Smedley Hydro, Birkdale.

CAFES.

Reece's Cafes, 9, Parker Street, and 42, Great Charlotte Street.
 Fuller's Cafes, 33 Bold Street and 1 Ranelagh Street.
 Yamen, Bold Street.
 Edinburgh, 93, Lord Street.
 King's, 34, Church Street.
 Palatine, 59, Lord Street.
 Empress, 60, Bold Street.
 Wood's Cafe, 8, Bold Street.

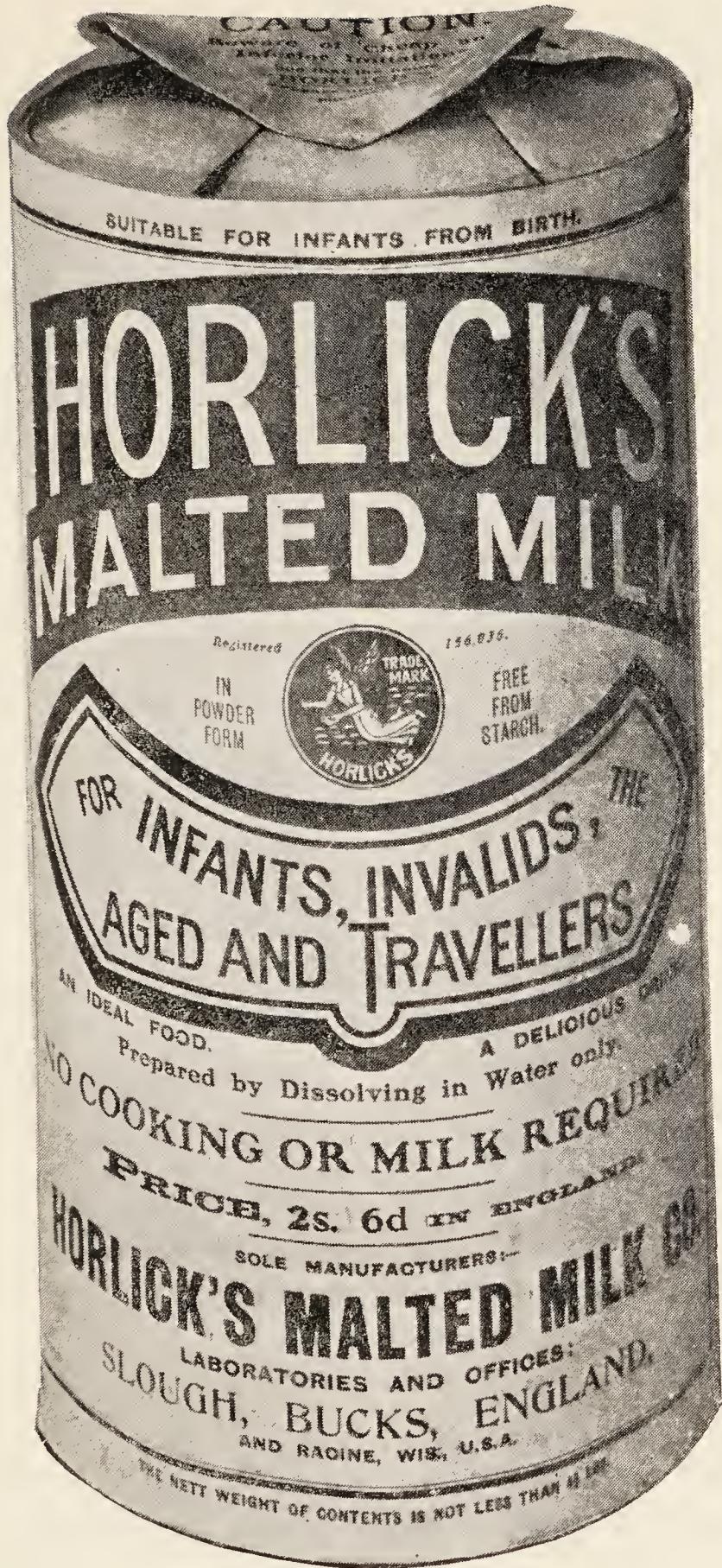
Light Refreshments will be served in the Hall of the University on the days of the Sectional Meetings.

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Mould & Brown Ltd.

Fireplace Specialists,

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AND
56 & 58 STANLEY STREET,
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The
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FIRES
are
Simple,
Hygienic,
and have
Perfect
Combustion
with great
Economy of
Fuel.



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Esq.,
F.S.A.,
F.R.I.B.A.,
and other
Eminent
Architects.

INGLE NOOK IN "DEVON" HOUSE.

Sole District Depôt for the "**Devon**" **Fires**, which may be called the Doctors' Fire as it is so extensively adopted and recommended by the Medical Profession.

Can be readily Fixed into Existing Mantels.

A Visit to our Showrooms will be much appreciated.

Mantel Pieces, etc., Designed and made to suit any special requirements.

EXCHANGE STATION HOTEL LIVERPOOL

This large Hotel, owned by the Lancashire and Yorkshire Railway Company, is most advantageously situated for Visitors to Liverpool.

It adjoins the Exchange Station, at which the Express Trains from Scotland arrive and depart. It is the nearest First Class Hotel to the Landing Stage and principal centres of business.

The Hotel is sumptuously appointed, and is noted for the excellence of its Cooking and *exceptional value in Wines.*

The Banquets, &c., in connection with the British Medical Association's Meetings in Liverpool are being carried out by the Exchange Station Hotel.

Telegrams: "Station Hotel, Liverpool."
Telephones: Nos. 3310 and 3311 Central.

Lancashire and Yorkshire & North Eastern Railways.

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of England to

Belgium, Germany & Switzerland

is via

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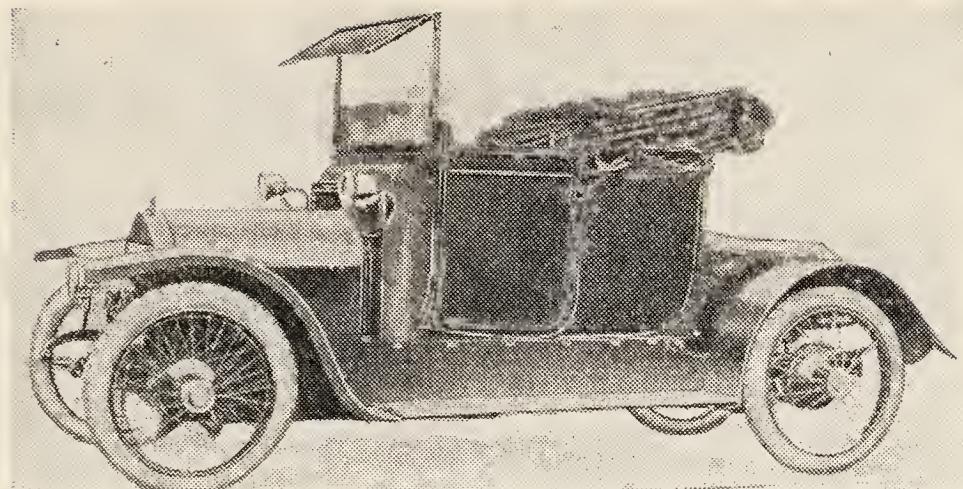
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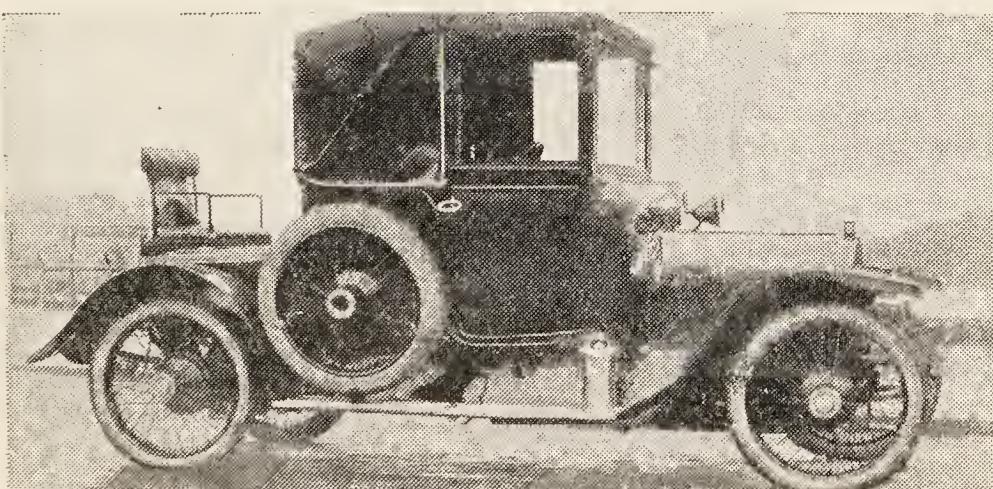
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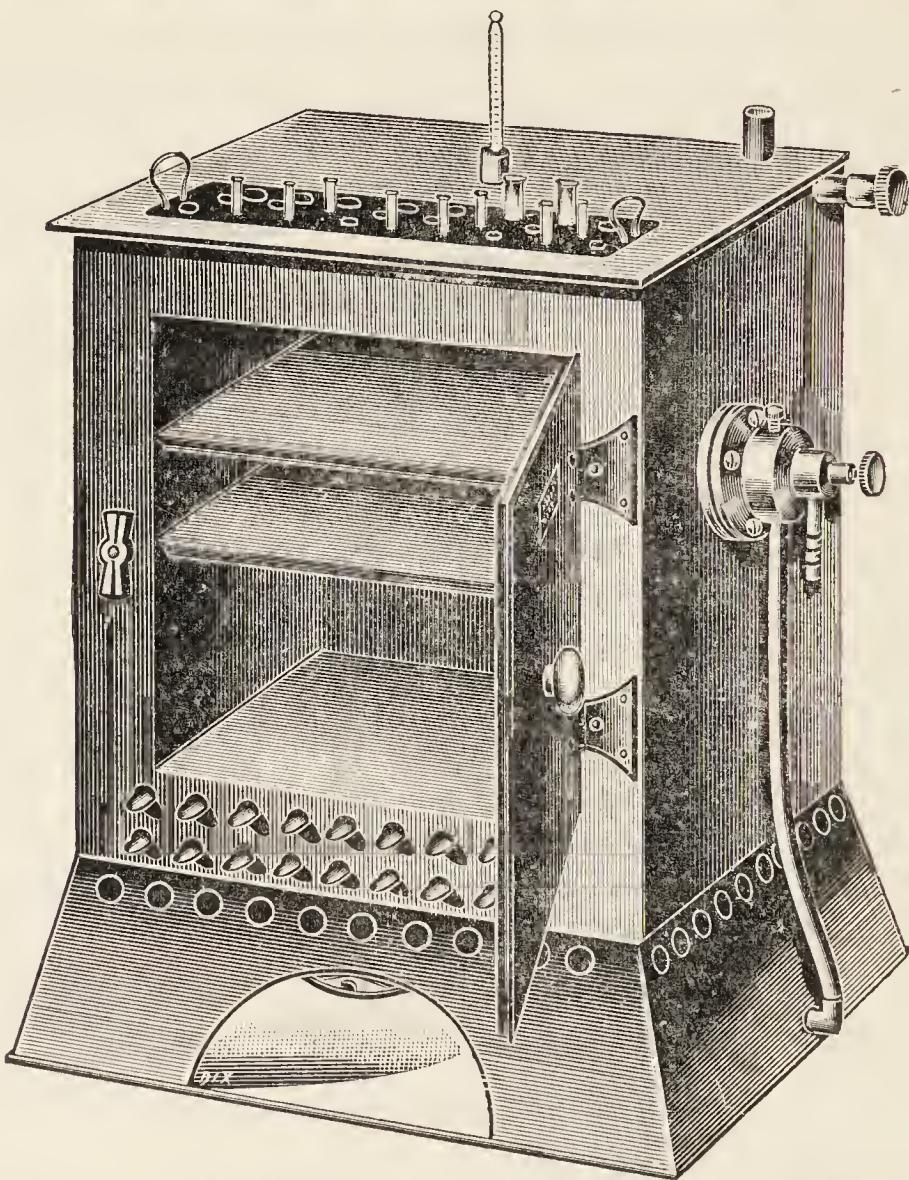
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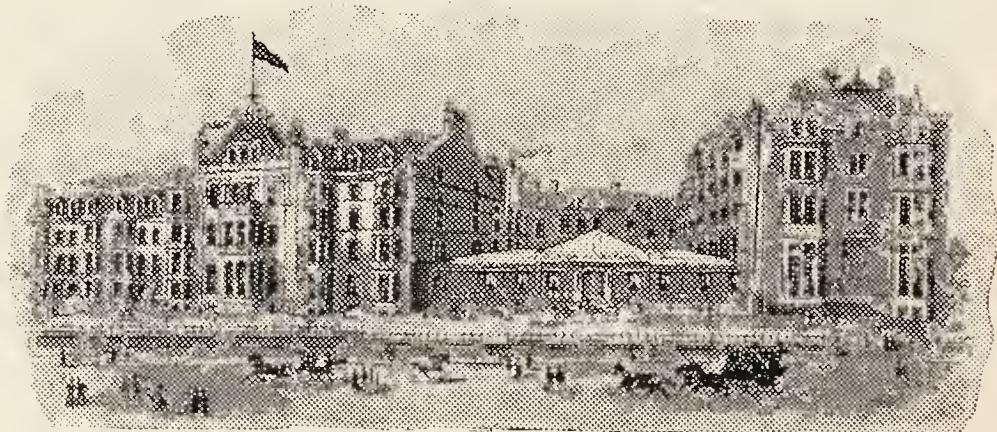
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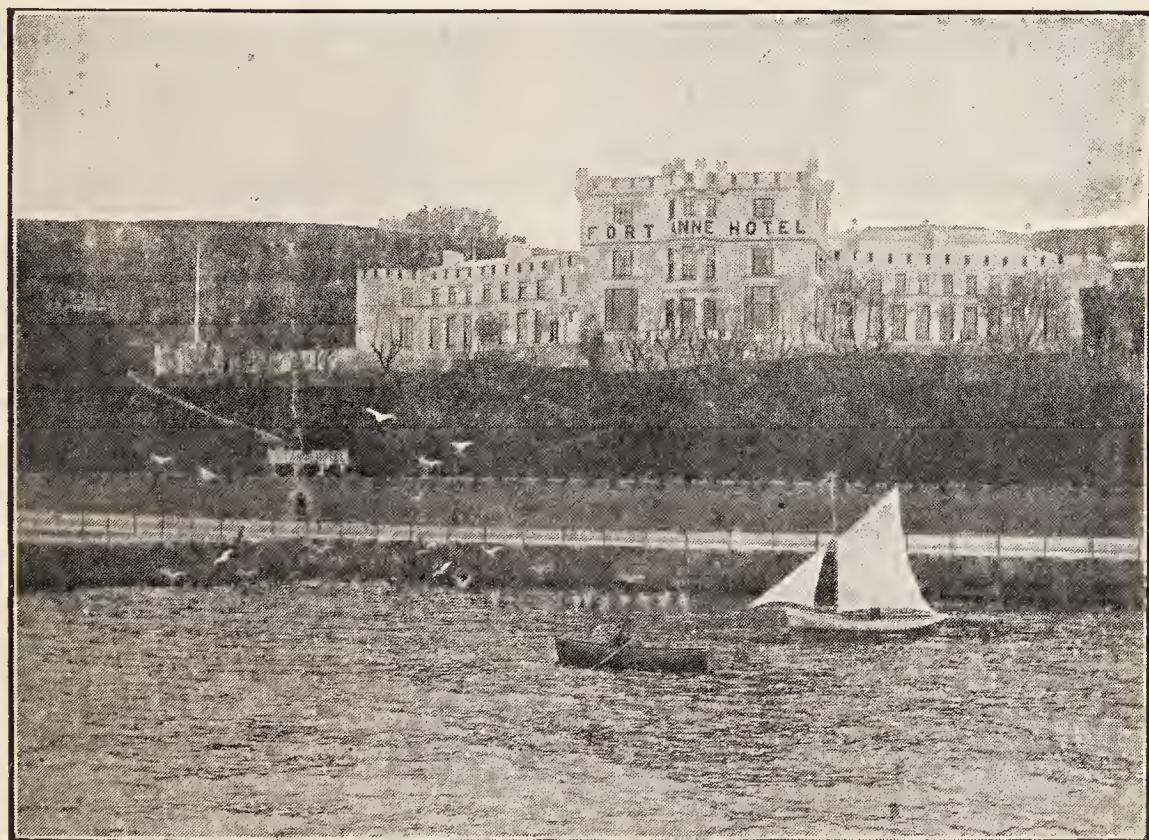
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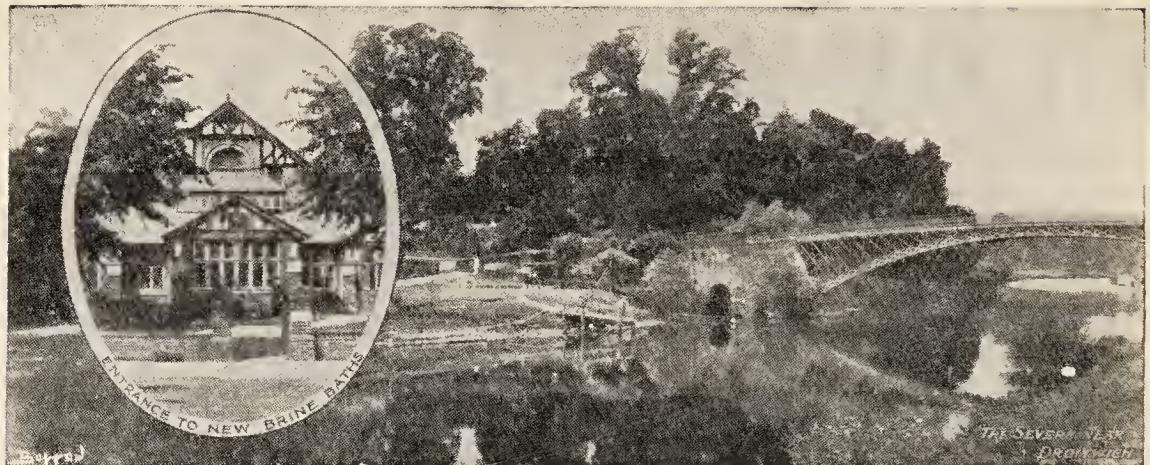
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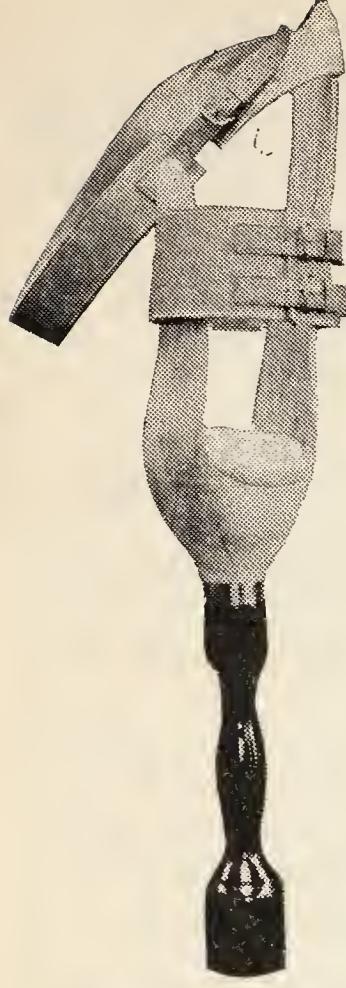
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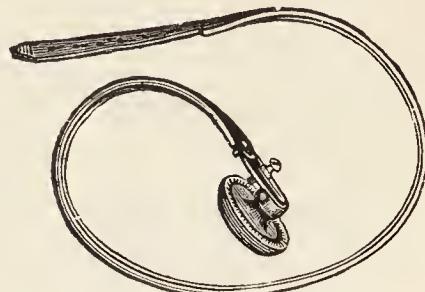
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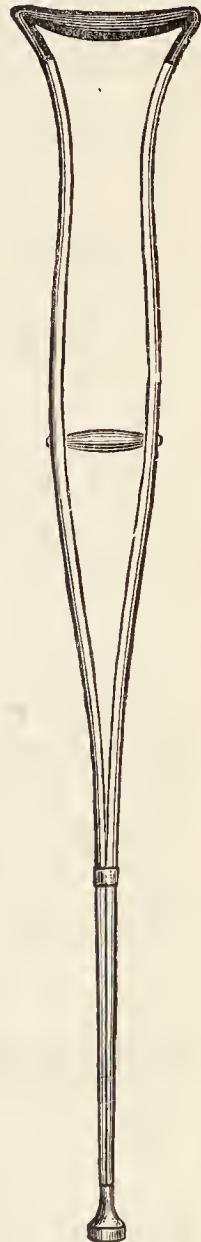
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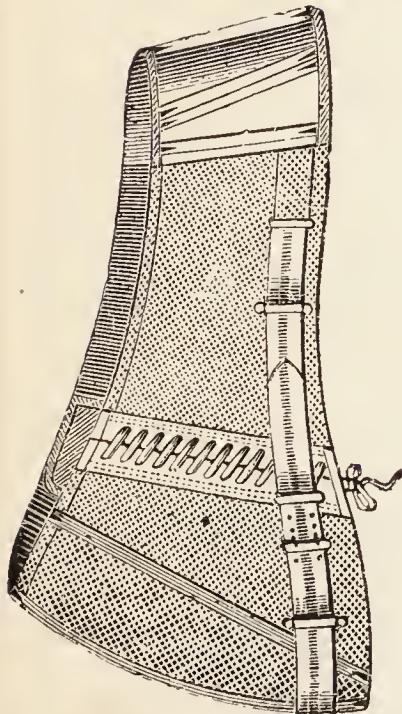


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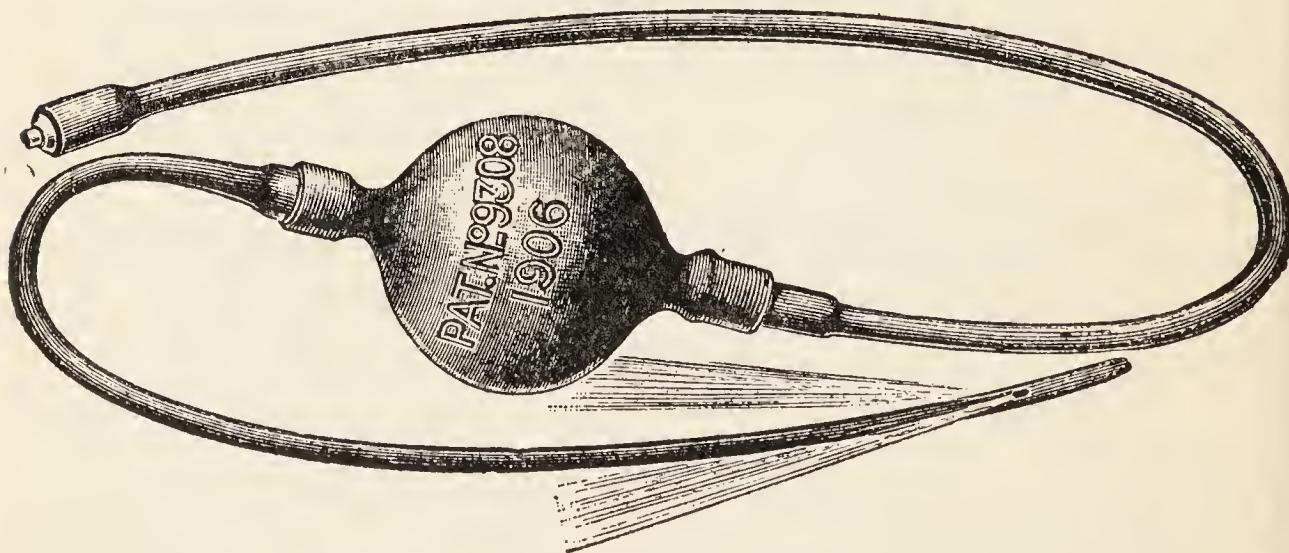
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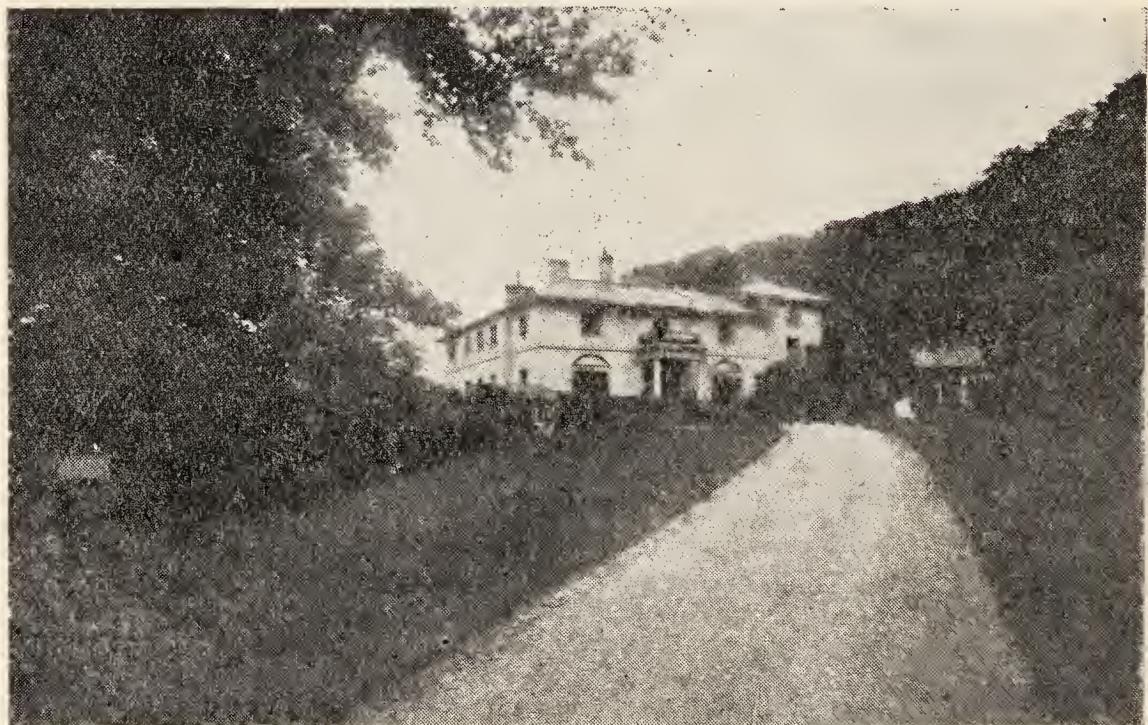
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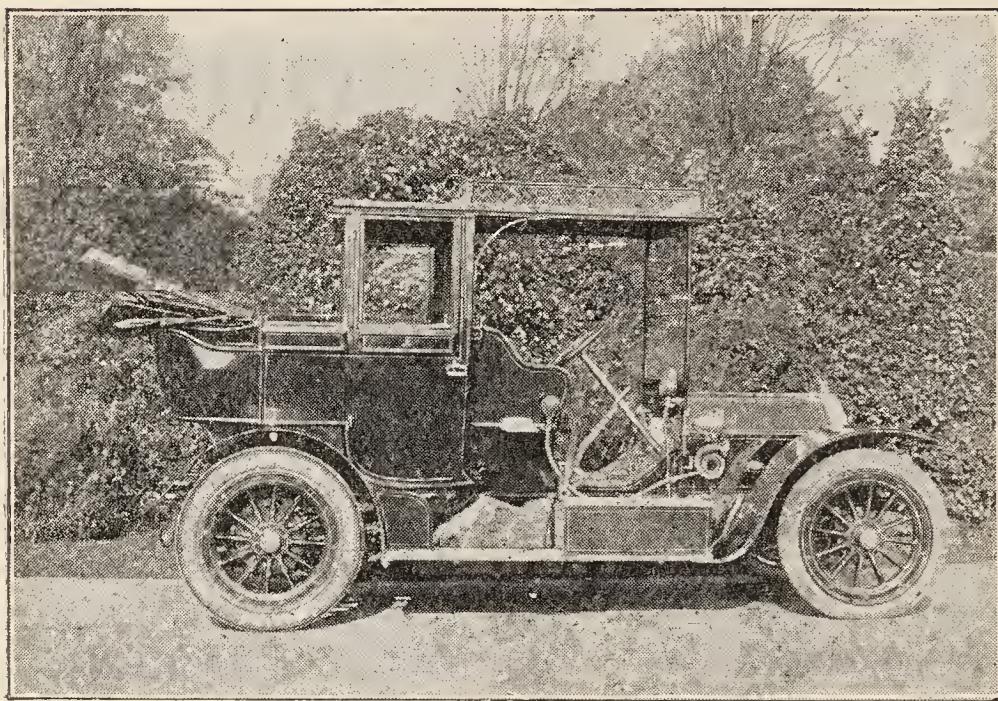
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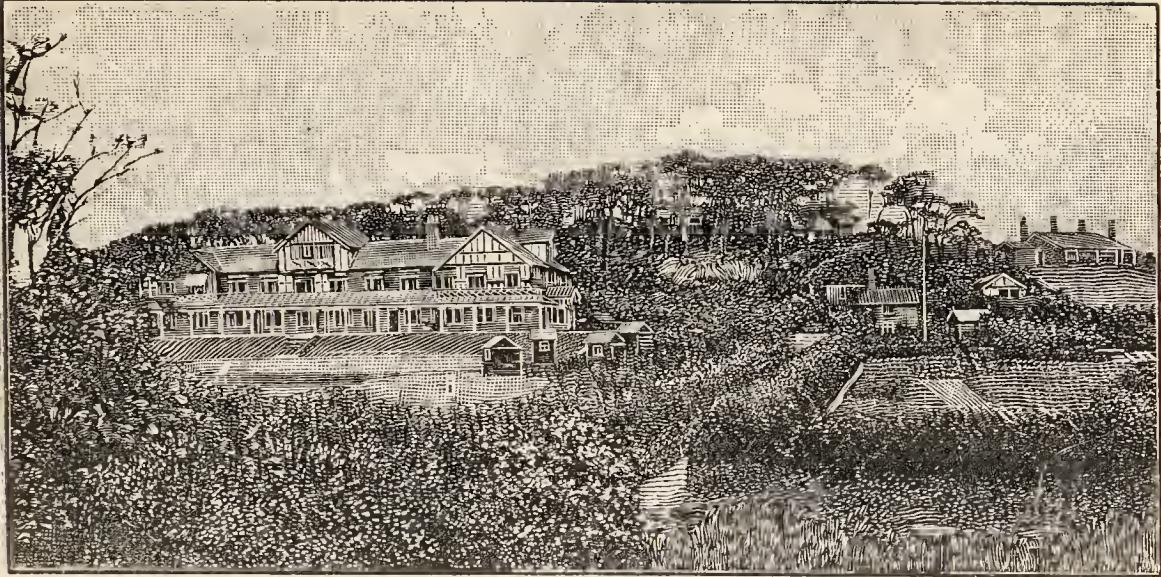
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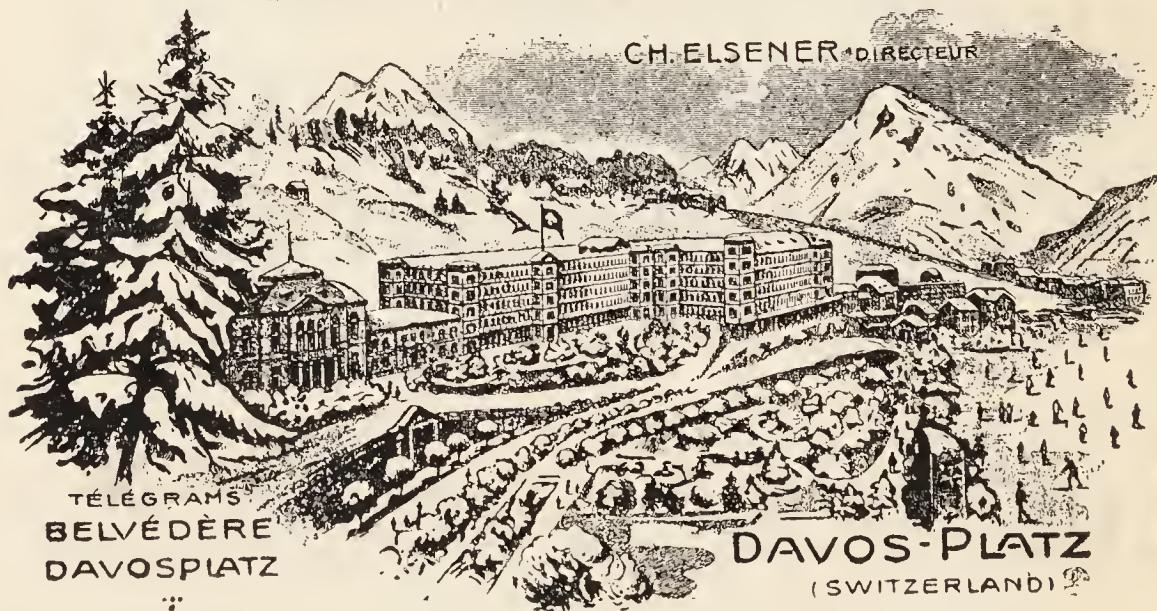
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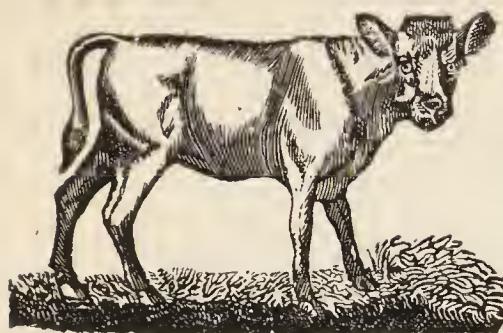
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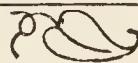
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